

**Saving the Campus Farm: One Approach to Leveraging Institutional Support for a Campus Farm Space**

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## **Problem**

The number of university and college campus farms have increased 13-fold since 1992 to over 300 campuses (LaCharite, 2016). According to reporting by the Association for the Advancement of Sustainability in Higher Education (AASHE) (2018), 80% of campus farm spaces are less than 5 acres in size and 86% are located on campuses with no agriculture school (AASHE, 2018). Campus farms provide a rich interdisciplinary social context of community-based, sustainable agriculture that spans the entire suite of social and physical sciences as well as non-STEM fields such as business, religious studies, and communication. Yet, the majority of these farm spaces are underutilized in the curriculum, engaging primarily with students majoring in agriculture or sustainability-related degrees and co-curricular programs (Galt et al., 2016; Parr, 2011). This case study posits that a lack of connection to curriculum and the resulting championship of campus farm spaces by faculty, stymies institutional commitments to the long-term funding of campus farm spaces. This document describes an approach taken at a small, liberal arts, primarily undergraduate institution to generate institutional support for the campus farm through the creation of cross-disciplinary undergraduate course modules that use food and farming for a situated learning context.

## **Campus Farm History**

The Farm at Butler was initiated in 2010 by a student group, Earth Charter Butler, with assistance from the Center for Urban Ecology and Sustainability (CUES). The farm began as a quarter-acre plot located on west campus, which is marginal land that is located in a 100-year flood plan and home to intramural fields. In 2011, the CUES received 3-years of funding from the Nina Mason Pulliam Charitable Trust to expand the farm's production footprint to 1-acre, hire a full time farm manager, and create a market farm for the Indianapolis community. Over the next year, the farm manager expanded the farm to its current 1-acre size and established the foundation for nearly a decade of selling products to the local community through a weekly Community-supported Agriculture (CSA) program, weekly farm stand, and restaurant sales. During this time, the focus of the farm's mission was to be a model of urban farming and a source of healthy, fresh, local food for the Indianapolis community.

Educational engagement of the farm was primarily focused upon 1-hour farm tours to community organizations, with little engagement from Butler students, faculty, and staff aside from a handful of paid student workers each year. After two years of struggling to keep farm operations funded after the completion of the 2011-2014 Nina Mason Pulliam Charitable Trust grant, the CUES changed the mission of the farm in 2016 to a three-pronged mission:

1. To promote excellence in education and research across the University curriculum,
2. To educate Butler University and the Indianapolis community about sustainable agriculture and the local food system, and
3. To serve as an example of sustainable urban agriculture through the exploration of local food production.

This mission change was the impetus for reimagining the role of the campus farm to the Butler community.

## Challenges

Because the farm was not a University initiative, i.e., it was started by a student group and developed through external grants, the CUES faced many barriers to acquiring University-wide support for the campus farm. From a strategic perspective, it makes sense that the Administration did not see value in a farm at a University with no agriculture or environmental program until 2015. The activities of the farm were understandably not valued by the institution because they were not engaging with the Butler community in extended and meaningful ways.

Within the first year of employment in 2015, the CUES Director submitted 13 applications to local and federal funders. Nearly all were rejected on the grounds that 1) they don't support businesses or 2) the funding operations should be the responsibility of the institution, whereas funders support innovative, once-off projects. While these funder responses were discouraging, they helped build a case for permanent internal funding of farm operations.

Luckily, the last grant application was awarded, spearheading a project focused upon the development, implementation, and research of farm-situated place-based experiential learning in four science classes. The ultimate goal of this grant, although not explicitly written until now, was to save the campus farm by generating faculty support and curriculum around the space so that the institution as a whole recognized its value to the future of the University.

## Approach to Saving the Farm

*\*\*These steps are meant to serve as guideposts, not meant to be prescriptive. Consider assets at your institution and how they might be leveraged.*

The guiding motto for CUES Staff during this effort was, "If the farm goes away, we want the University to feel it."

1. **Align approach with University strategic goals.** Of relevance to the campus farm and its potential was the strategic goal: *Create and deliver transformative student-centered learning experiences that prepare graduates to make a meaningful impact in the world.* All Universities have strategic goals related to curriculum and, often, community engagement. Use them to your advantage.
2. **Create a new course, preferably one in the core curriculum.** Aim for courses that are pass/fail or simple to create and implement. The low-hanging course at Butler University was Physical Well Being, a 1-credit hour, pass/fail course part of the core requirement for all students. The creation of a gardening-focused section of this course established the farm manager as an instructor, which helped to secure their position at the University, and created the first ever course using the campus farm. This newly developed core curriculum-required course not only connected students to the farm, but it also added a course to a curricular area in need of offerings. During the pandemic, the course proved that it was resilient to class limitations by continuing to offer the in-person class outdoors when many other course sections were cancelled.

3. **Search directory for faculty that teach courses with the potential to be food or farm-related.** CUES staff initially reached out to 4-5 faculty with which connections had already been established or that taught courses that were identified as relevant to food and farming. These faculty contacts were asked if they would be interested in teaching their course content through the lens of food and/or farming. Copies of course syllabi were then requested in preparation for an initial meeting to discuss specific syllabus areas where food/farming might be implemented.

For example, an introductory biology class was the first selected to explore this approach because the content was relevant and easy to connect to food and farming, but also because the instructor already had a meaningful relationship to the campus farm, as one of the faculty who developed the CUES and its projects. The course syllabus contained a section on biodiversity with an associated arthropod diversity lab and another section on soil biology taught through a soil respiration lab. These labs and the associated lecture and reading content were modified to focus on a food and farm context for these biological concepts, collection of lab data on the campus farm, and interpretation of the data from both a biological and practical farming perspective. Data was useful to farm manager to determine whether his practices were having an impact on the environment (see additional example courses in Appendix A).

4. **Meet individually with identified faculty to discuss ideas.** At this point, once can try to apply for funding to support the development and testing of student learning outcomes. It is not required to continue. Funding helps incentivize faculty, temporarily cover a portion of the farm manager’s salary (which was needed at Butler University), and offer additional salary savings and indirect cost recovery (if negotiated) to temporarily support farm operations.

Sample Budget Line for Year 1 from External Funder

Item	Budget
Faculty Stipends	\$2,500 per participant
Farm Manager Salary <sup>1</sup>	2.0 months of salary covered by grant award
Project Director Salary <sup>1</sup>	1.0 months of salary covered by grant award
Indirect Cost Recovery <sup>1</sup>	A percentage of direct costs in grant budget

<sup>1</sup> The farm manager and project director salary and indirect costs recovery were negotiated to be rerouted back to funding the farm manager position to keep farm operations going during the grant award.

5. **Facilitate a faculty-staff learning community (FSLC) with the goal of developing food or farm-related classes or class modules (e.g., multiple weeks of lesson).** Sustainability professionals and the farm manager participate in the FSLC with faculty participants to provide content knowledge to faculty.

FSLCs are small multi-disciplinary groups of university faculty and staff that meet regularly to discuss a professional development topic of interest with an eye to the ultimate beneficiaries; students (Cox & Sorenson, 1999). The intentional inclusion of staff in the traditional faculty learning community (FLC) format breaks down hierarchical silos, strengthens the academic community, creates opportunities for innovative living lab projects, and integrates curricular and co-curricular programming. The goals of the FSLC were to: (1) create learning opportunities for students that enhance place attachment, sustainability meaning making of a place, environmental science literacy, and civic mindedness, (2) build faculty confidence in the scholarship of teaching and learning (Richlin & Cox, 2004), and (3) establish campus farms as spaces for learning and collaboration that are integral to the lifeblood of the campus community (see Angstmann et al. 2022 for the FSLC curriculum that was utilized).

- 6. Implement and assess curriculum impacts on student learning.** Do not skip this step! Being able to show that the farm space is required for the success of a specific number of classes and that the use of the farm is beneficial to student learning outcomes is important. Assessment metrics included: number of students impacted annually, number of different courses and disciplines using the campus farm as a curricular space, faculty collaboration and networking (surveys to FSLC participants), and student learning outcomes related to place attachment, situated sustainability meaning making, environmental science literacy, and civic mindedness (Williams & Vaske, 2003; Kudryavtsev et al. 2012; Liang et al., 2018; and Steinberg et al., 2011, respectively).
- 7. Require a cross-disciplinary poster session.** CUES staff found it was important to raise the profile of these classes as much as possible. An end-of-semester poster session to which we invited all of campus, including Administration, was a great way for students to reflect upon and solidify their learning while also exemplifying impact of the campus farm to the curriculum.
- 8. Encourage faculty to continue using the farm and advocating for its presence on campus.** All of our faculty collaborators were asked to advocate when they could for the campus farm. More specifically, faculty were asked to reflect on their teaching in their annual review including, how using the campus farm has enhanced their teaching and outcomes and future ideas for including the campus farm in future curriculum.
- 9. Continue to engage new faculty and support them as they create curriculum.** This includes a regular workshop series with sessions hosted by campus sustainability professionals, farm manager, and faculty champions and presentations of class activities and outcomes at Butler's annual faculty conference, Celebrations of Innovations in Teaching and Learning.
- 10. Find ways to unite farm-situated curricula to further bolster long-term support for farm operations.** Our efforts to build cross-disciplinary curriculum across campus resulted in nearly a dozen courses teaching their disciplinary content through the lens of

food and farming. This resulted in the creation of an Applied Local Food Systems minor where students learn about the role of local food systems in solving food system challenges through varying disciplinary approaches. The minor culminates in a year-long internship with a local food or farm organizations, providing much-needed labor support to local farms and co-creating projects to address local food system challenges.

### **Outcomes**

At two points during this approach, University Administration was faced with a choice to either fund the farm or experience a loss of grant funding or courses offered. The first choice occurred when we received a grant award from the National Science Foundation in 2016, but didn't have funds to support farm operations on which the grant award relied upon. The second choice occurred when the extent of the food- and farm-related curriculum was presented to Executive Council in 2019 with a request to support the farm as grant funding was coming to an end.

With the first, the Provost and Dean of Liberal Arts and Sciences gifted annual funds and redirected indirect costs return and salary savings from the grant award to keep the farm operational for the duration of the 3-year grant. The 3-year grant resulted in ten classes working with the campus farm space annually, creating leverage for a second, more permanent ask. During this second monetary ask, the Provost was impressed by the number and disciplinary breadth of classes reliant upon the farm space (16) and began work to incrementally add to the farm's budget (approximately \$10,000 annually) until the farm was fully funded. Luckily, the farm received a second 3-year grant award for curriculum development in 2019. So, indirect costs and salary savings were used to temporarily support the financial needs of the farm, while the \$10,000 annual budget increase was phased in to create a permanent budget.

Ultimately, this approach resulted in the following successes:

- The farm manager's salary, which was revenue and grant-funded, became 100% University-funded. This leaves sales revenue to support student interns and supply needs.
- The number of classes using the farm increased from zero to 16, in 11 disciplines (biology, chemistry, environmental studies, communication, education, marketing, religious studies, pharmacy, political science, art history, and English).
- With these classes, an Applied Local Food Systems minor was created that also meets two core requirements and culminates in a year-long internship with community food organizations. This provides meaningful experiences for students will providing much-needed labor to local food organizations (mostly urban farms).

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**Appendix A.** Examples of course topics that engage with the campus farm and other community farms.

### 1. Environmental Studies

What factors contribute to diverse farmer perspectives on policies, practices, and perceptions of food production and consumption for establishing sustainable local food economies? Students read, reflect, and discuss Michael Pollen's *The Omnivore's Dilemma* to become familiar with food system issues. They also examine the environmental impact of their food consumption via a carbon footprint exercise. Utilizing ethnographic methods at the campus farm and other local urban farms, students localize readings and discussions to answer the driving question. Qualitative data are interpreted using course concepts culminating in a research paper and presentation. Engagement with local farms better prepares students for their required internship experiences and their future careers.

### 2. Advanced Ecology

How do sustainable farming practices alter ecosystem function, in particular soil carbon (C) storage, pools, and fluxes, and what are the socio-ecological (dis)advantages of incorporating agroecosystems into an urban landscape? Students build upon what they learn in course lectures and from prior courses, such as introductory biology, to design and conduct hypothesis-driven research at the campus farm and adjacent prairie on soil C and controls of moisture and temperature. Students write a final report, present at the cross-disciplinary poster session, and contribute to a multiyear soil archive used in faculty research to quantify long-term soil ecosystem function in urban agriculture systems.

### 3. Teaching Science and Social Studies Methods for Middle Childhood

Pre-service education students, in collaboration with 4<sup>th</sup> graders at an Indianapolis Public School and the Butler campus farm, design and implement a curriculum guide—using the 5E instructional model<sup>74</sup>—that utilizes project-based inquiry and active experimentation based on learned content about scientists and their experimental contributions to botany and gardening. Participating 4<sup>th</sup> graders explore scientists and eras of time including but not limited to Squanto's "Three Sister" planting method, plant identification inspired by Theophrastus, and Katherine Esau's plant anatomy. Pre-service students test lessons with 4<sup>th</sup> grade students at the campus farm and engage in reflective practice as they adapt their lessons. This project gives pre-service teachers a deep understanding of curricular design and pedagogical awareness, expose young learners to environmental science concepts and botanical/agricultural history, and result in publicly available lessons for grades 3-5.

### 4. Marketing Strategy Capstone

With a growing consumer movement to "buy local" and an increased awareness of socio-environmental issues in the global food system, opportunities arise for new business players that appeal to these concerns, from local farmers' markets to behemoths such as Whole Foods. In this 3-week module, students scrutinize the question "What are current issues and trends in the food industry and how are fundamental economic theories—such as "bigger-is-better" economies of scale—challenged within the food value chain?" Using industry and issues



analyses combined with 1) visits to the campus farm, a local apple orchard, and an urban food production facility, 2) case studies of Gerber in Poland, Amazon, Whole Foods, and Second Helpings Food Rescue, and 3) a joint class with students in the Sustainable Healthy Nutrition course (see #5 below), students analyze the effects of globalization, sustainability, emerging technologies, politics, and ethics on consumer, investor, and citizen choices related to food. Students also use strategic and ecosystem thinking to better understand the shifting landscape of the food industry.

#### 5. Sustainable Healthy Nutrition

Knowledge of sustainability—the soil in which food was grown, growing methods, and how the animal was raised and fed—is essential to recognizing what constitutes a healthy diet and the potential health benefits of that diet, yet research surrounding sustainability and nutrition health is emerging. In a sea of falsified or loosely presented scientific data, understanding rigorous, quality research with respect to sustainable nutrition is imperative for one's own health and the health of the population. This full semester module/course is modeled on a Culinary Medicine study abroad course in Tuscany about the Mediterranean diet. Students are led through an inquiry-based investigation on the nutritional and environmental characteristics of a local, seasonal diet and how those characteristics contribute to human and environmental health. Students will journal experiences gathered through course readings and discussions, farm tours, cooking demonstrations, and personal reflections to create a knowledgebase of diet, lifestyle, and nutrition and how they relate to disease. This knowledge is then shared with a local food pantry through cooking demonstrations.

#### 6. Social Responsibility and Community

This inquiry-based, service learning module centers upon a communication challenge presented by a farm organization to their assigned student group consultant. Students, with their urban farm, create a model of the farm-defined communication problem, conduct formal interviews to learn about how the community is impacted by the farm, and devise strategies to solve the communication challenge which may include developing media content to advertise a specific event, developing a campaign strategy or website, or live Tweeting a silent auction. Students write four papers reflecting on service, privilege, community, and communication as a tool for empowerment, critically engage with scientific/ecological concepts that they likely would not have encountered in their undergraduate career, and provide a service to local farms that often need communications support. At the end of the semester, students present to their classmates and farms representatives.