



DICKINSON COLLEGE FARM

The Dickinson College Farm

2021 ANNUAL REPORT

Dickinson

COLLEGE FARM



“To inspire responsible
land stewardship
through the study of
the earth’s natural
processes and
demonstrate the
science, practice and
culture of sustainable
food production.”

The staff at
the College
Farm invite
you to review
some of our
accomplishments
over the 2021
calendar year.

Table of Contents

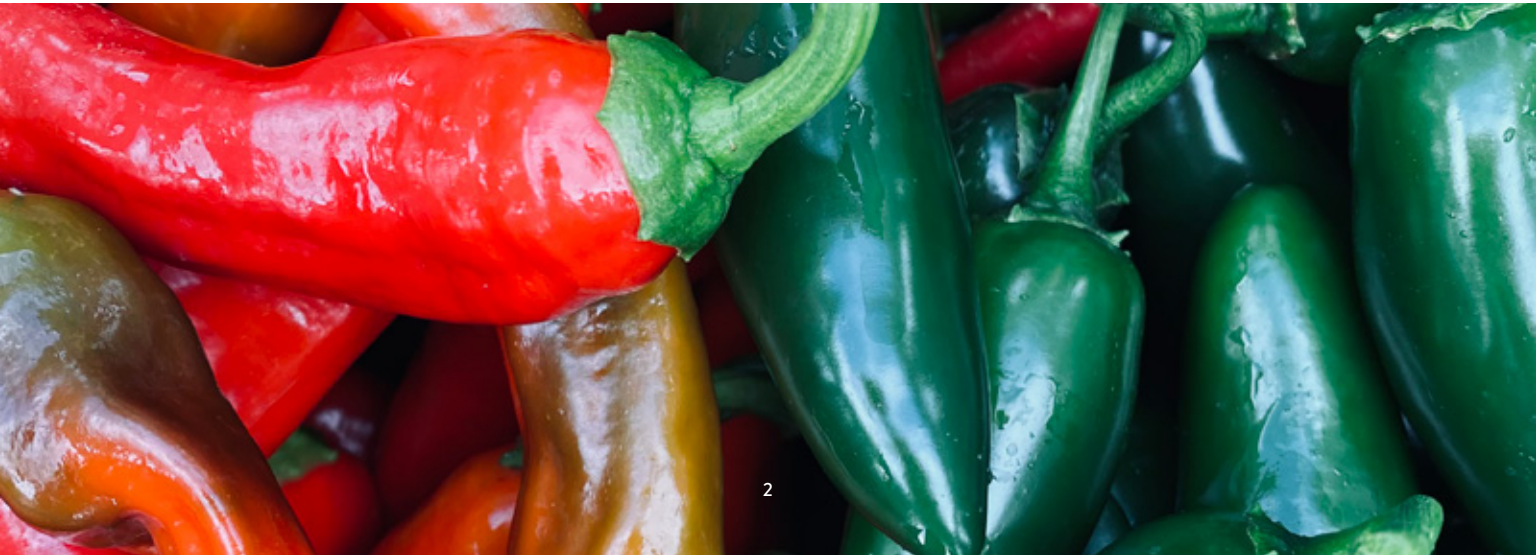
Farm Production Highlights	2
Livestock & Meat	3
Farm Finances	4
Research and Partnerships	5-6
Academic Collaborations	7-8
Education and Outreach	9
On-Going Outreach and Co-Curricular Programming	10
Farm Initiatives	11

Farm Production Highlights

The 2021 season at Dickinson College Farm was both challenging and rewarding. Over the course of the season, we lost our crew leader, an apprentice, and our packing house manager all in the span of two months. Each time the farm team lost a member, we were faced with the question of how to adapt and deal with the loss. We are proud of our team’s ability to rise to the occasion and find solutions. We tapped volunteers to help ease the workload, we found ways to bring on more labor, and recruited a new packing house manager just in time for fall harvests.

Despite these challenges, the College Farm had a very productive season. We managed ten acres of certified organic vegetables providing food to our CSA program, dining services, the farmers’ market, plus a small amount of wholesale to local farmers. We also donated approximately 4,500 pounds of produce to Project S.H.A.R.E and the Gleaning Project of South Central PA. Amidst the lingering pandemic our CSA remained strong. We had 147 members in 2021 compared to 130 members in 2020. In 2021, we created the option for CSA members to purchase a small share every other week which may have helped to increase membership. We managed our membership, communications, inventory, and weekly customization through the farm-friendly and Pennsylvania-based software, Harvie. Working with Harvie continues to benefit the College Farm and CSA members by increasing customer service and farm-based efficiencies. Our CSA revenue matched last year at about \$58,415.

2021 FIELD PRODUCTION HIGHLIGHTS		
CROP	UNIT	TOTAL HARVESTED
BROCCOLI	LB.	1,156
CABBAGE	EACH	1,185
CARROTS	LB.	4,757
CORN, SWEET	EAR	2,839
CUCUMBERS	LB.	2,000
KALE	BU.	1,318
LETTUCE MIX	LB.	1,455
MELONS	EACH	950
POTATOES	LB.	6,526
SWEET POTATO	LB.	5,360
TOMATO	LB.	11,000
ZUCCHINI	LB.	1,414





Livestock & Meat

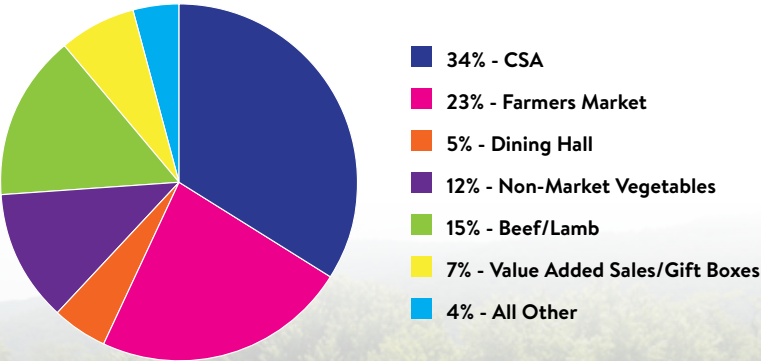
We had another productive year in the livestock pastures under the capable hand of Danielle Moser '20, who returned to the farm in 2021 as a second-year livestock apprentice. Danielle's skills with animal handling, veterinary care, and pasture management paid off in herd and grassland health as well as overall productivity. We have nine new calves in the beef herd and raised 24 lambs to maturity—twelve of which were butchered for our meat customers with the rest being sold as live lambs to other local farms. The sheep were temporarily removed from the Dickinson solar farm after two animals injured themselves on sharp corners of the solar panel mounting hardware. We are in touch with the solar field contractor and hope to have all of the sharp corners covered in time for summer grazing in 2022. We started the winter hay season with an ample supply of alfalfa and grass baled during the summer by our neighbors from the Triple L Dairy farm—this reserve of all-natural forage grown on Dickinson land keeps the beef cattle fed while saving the farm thousands of dollars in reduced expenses.

Meat sales were strong again in 2021. While the dining hall did not buy meat due to COVID related challenges, we made up for this with higher volume through our Square online website dcorganicfarm.square.site. Under the new setup, customers can view inventory, order items, and pay online for scheduled curbside pickup. All of this increases efficiency for both the farm team and meat customers. In the fall, farm students and apprentices served several hundred hot dogs, sausages, and burgers along with fresh cut fries at a popular Oktoberfest event on campus. Specialty "Red Devil" beef jerky custom-made from our beef by a local kitchen has become a popular item at the farmers market and in holiday gift boxes. We look forward to more meat sales in the coming year.

Farm Finances

The College Farm initiated a Winter Buying Club in early 2021, allowing campus community members the opportunity to shop online for weekly deliveries of farm-raised groceries ranging from produce and meat to canned goods and prepared frozen foods like soups and pizza. During the remote working and learning of the 2021 spring semester, the farm’s buying club offered an alternative to indoor shopping at area grocery stores.

YEARLY TOTAL REVENUE	
YEAR	TOTAL REVENUE
2017	\$167,486
2018	\$153,322
2019	\$190,427
2020	\$160,757
2021	\$172,626



The partially closed campus in the spring of 2021 required the College Farm to reinvent campus-based, revenue-generating programming. To this end, the farm experimented with new product lines and virtual events with relative success.

The Fall semester brought the students back to campus after the remote Spring semester. Being able to carefully hold some events and feed students in the Dining Hall helped bring back *some* of the revenue that had lacked the prior year. Revenue-generating programming like POP, GATHER and Spring Gift box sales helped to fill the void of Dining Hall sales. Non-market vegetable sales exceeded last year, and farmers' market and meat sales remained strong. Overall, total revenue was \$ 172,600 exceeding last year revenue by \$11,900. Please see a snapshot of our revenue sources to the left.





Research and Partnerships

Jenn Halpin continues to work closely with scientists and researchers at the Rodale Institute to partner on field-based research endeavors at the College Farm. This partnership and associated field trials will provide our farm, as well as the regional food system with valuable scientific-based information capable of influencing farming practices and systems for improving soil, plant, and ultimately human health.

PRODUCTION-BASED FIELD TRIALS Two separate field trials were conducted in 2021. The first, in collaboration with Rodale Institute was a comparison of butternut squash grown on no-till mulch, a method in which a stand of rye is crimped at its base and rolled down to create a mulch. The squash was planted directly into the mulch without tilling the soil while the second succession was planted as we normally do on plastic mulch. The goal of this field trial is to understand whether and how low (roll down cover crop)- and high-input (plastic mulch) technologies in reduced-tillage management systems enhance nutrient concentration of α -carotene, lutein, calcium, and phosphorus in winter squash when stored for 60 days. Samples of butternut squash were taken in late 2021. Sample results based on curing times will be made available in 2022.

Vegetable Production Manager, Will Nelson experimented with no-till roll down versus black plastic systems on our 2021 tomato crop. In this trial, it was observed that the no-till planting of tomatoes outperformed the planting on black plastic—a big win for soil health on the farm. Less tillage means less carbon released into the atmosphere, less disturbance of microbial populations, and increased water holding capacity, just to name a few of the benefits.

With lab assistance from Professor Dana Somers and equipment support from Professor Tom Arnold, Jenn Halpin took time in 2021 to explore the impact that spraying farm-made compost tea may have on greenhouse tomato photosynthesis and to understand what microbial communities the tea introduces to plant foliage. Tissue samples were collected weekly and brought to Professor Somer's lab for processing. Jenn will use the early spring of 2022 to work with Professor Somers to sequence the samples.

BIOGAS Matt Steiman collaborated with Dr. Sarah St. Angelo (Chemistry) to study the energy production value of brewers spent grain (BSG) from Molly Pitcher Brewing Company when co-fermented with dairy cattle manure in lab scale anaerobic digesters. This project provided six students with hands-on research experience while helping to establish foundational data regarding BSG as an alternative energy production feedstock. After over 150 days of daily feeding of small digesters with blends of BSG and dairy manure, our data suggest a two to threefold increase in biogas production when a modest amount of BSG is added to manure with no adverse consequences. The farm continues to collect 1,000-2,000 lbs. of BSG per week from Molly Pitcher.

FLIES Matt's article describing our 2018-2020 USDA-funded research project to control nuisance flies in the pastured beef cattle herd was published in the Stockman Grass Farmer, a well-known trade journal for grass-fed beef operations. Dr. Jason Smith's article describing the full scientific details of the fly project is under review for publication in the Journal of Medical and Veterinary Entomology.

HOME GARDENING INITIATIVE Funded through the Burpee Foundation, Jenn Halpin's home gardening project continues to grow with help from student researchers and community partners like Project SHARE. In 2021, student research assistants, Audree Khalishah '21 and Dee Findlay '22 worked with borough residents to develop home garden plans to ensure a productive 2021 gardening season. During the 2021 summer, two full-time student researchers joined Jenn for eight weeks. Students Dee Findlay '22 and Maeve Thistel '23 continued the work started over the spring semester with borough resident home gardeners, in addition to designing and conducting theme-based surveys, maintaining a research home garden on campus, and working to recruit more borough residents to work with on the cultivation of home gardens. The summer and fall student researchers successfully aided the growth and number of home gardens in the borough and collected data on key outcomes resulting from growing ones' own food including increased food security, increased dietary diversity and biodiversity. A full report documenting the goals of this initiative and associated research can be found [here](#).

Academic Collaborations

During the spring semester of 2021, the farm experienced limited class visits due to campus restrictions. Academic visits included four class visits from Asun Arnedo's course "Gastronomy and Health in the Hispanic World" taught in Spanish by Matt and Maddie DuBoyce, the farm's 2020-2021 Education Outreach Coordinator covering themes of sustainability within the food system. Additionally, guest lectures were scheduled over Zoom with "Life in the Anthropocene" (Jim Ellison) and "Nutritional Anthropology" (Karen Weinstein). Over the course of the 2021 spring semester, the College Farm engaged with approximately 50 Dickinson students to support curricula goals.

With the return of in-person learning in the summer of 2021, farm staff provided academic support to a number of courses. Fifteen classes, involving close to 200 students utilized the farm to integrate food system perspectives in classes ranging from Studio Arts and Sociology to language classes, First Year Seminars, and Environmental Studies courses.

FOOD STUDIES During the 2021 spring semester, Jenn Halpin advised Bisrat Berhe '21 an IB&M and Food Studies major on her experiential component for the Food Studies certificate to develop an interactive and student-friendly garden at the Montgomery House on campus. Through survey responses, Bisrat designed and planted three garden themes including culinary herbs, pollinator-friendly plants, and another highlighting the culinary traditions of her home country, Ethiopia.

During the summer of 2012, Jenn Halpin taught an online course on the Introduction to Sustainable Agriculture, an interdisciplinary class rooted in the social sciences of sustainable food production. Nine students, from a range of academic majors were enrolled in this Food Studies Certificate program course. Jenn also taught for the Food Studies

Certificate program in the fall of 2021, introducing a FDST 250 Elective on the Food System of the Cumberland Valley. Twelve students enrolled in this in-person class.

THEATER AND DANCE During the spring semester, students, Kristen Kim '21 and Jadyn Brick '21 Weiss prize awardees through the Department of Theater and Dance worked with Theater and Dance faculty and Jenn to develop a performance piece in the woodlot at the College Farm. The performance included five dancers choreographing responses to the environment at the farm's woodlot. Approximately 100 people attended this outdoor performance in May 2021.

Additionally in the spring of 2021, Jenn worked with Sherry Harper-McCombs and Kent Barrett from the Department of Theater & Dance to collaborate on a virtual GATHER dinner event. In conjunction with their course "Design Principles and Practices for the Stage", students assisted with developing and filming a cooking show. Until 2020, GATHER was a monthly "pop up" restaurant coordinated by the College Farm. With help from the Department of Theater & Dance in 2021, GATHER offered a virtual cooking class along with meal kits featuring a four-course menu developed and led by local Chef Ross Morris. This virtual event sold out.



During the fall semester of 2021, Sherry Harper-McCombs partnered with the College Farm to host The Bread & Puppet Theater as part of a weeklong Department of Theater & Dance Residency. The outdoor performance was open to the public with close to 100 people in attendance.

COMPUTER SCIENCE The “farmdata” database collaboration between the farm and Computer Science department continues under the leadership of Professor Grant Braught, with support from Professors Farhan Siddiqui and John MacCormack. CS classes are using the project as a teaching tool for database and web interface development across multiple platforms as well as lessons in working on open-source software in conjunction with external programmers. The farm continues to use farmdata and its cousin AnimalData on a daily basis for produce and livestock management—the online database system is a critical part of our record keeping and reporting requirements for organic certification, sales to the dining hall and more.



Education and Outreach

Despite the remote learning forced by COVID in early 2021, Maddie DuBoyce '20, the farm's 2020-2021 Outreach & Education Coordinator developed online outreach programs over the spring semester that engaged the Dickinson community far and wide. Virtual program offerings included interactive cooking classes, virtual tours of local farms and businesses, plus partnering with MOB on an outdoor film at the end of the spring semester. A list of 2021 spring semester programs can be found [here](#).

Additionally, Maddie and the farm's '20-'21 Student Youth Educator, Claire Hallman collaborated to develop open-source educational videos that covered farm-based topics for youth aged K-12. To see some of the videos produced for our youth education and outreach programs please click [here](#).

In light of the College's COVID-19 regulations, Audree Khalishah, the farm's 2021-2022 Outreach and Education Coordinator was able to resume in-person programs. In the summer she led workshops for CONNECT camp and a Girl's Scout troop, followed by a "DIY Sustainability" themed first-year orientation program at the farm.

Audree filled the 2021 fall semester with monthly Pizza on the Plaza events, several cooking classes led by faculty, staff, and students, a workshop on local food insecurity in collaboration with CCLA, and tours to local food and beverage businesses within walking distance of campus. Campus events like Pizza on the Plaza were well attended with foot traffic from well over 200 students, faculty, and staff. Likewise, Audree's cooking classes and Edible Excursion tours also proved successful. Each event was well attended with close to 100 students taking part.





Ongoing Outreach and Co-Curricular Programming

GATHER The farm's first GATHER pop up restaurant since February 2020 took place on October 9th, 2021, with celebrity chef Fernando Saralegui, a Texas-based restaurateur. Saralegui's visit was part of a Clarke Forum initiative. GATHER and a paella event at the College Farm provided culminating experiences that involved students and members of the campus community.

SEED The farm relaunched in-person Sustainable Earth Education (SEED) classes. In the fall semester, Student Youth Educator, Julie Korgen '22 worked with three schools and youth groups, reaching a total of 42 students. She delivered lessons on a range of topics from plant structure, sustainable agriculture, to the farm-to-table model.

FOOD WASTE DIVERSION In preparation for the construction and implementation of the biogas expansion project, Matt continues efforts to cultivate local partnerships in order to eventually recover up to one ton of food waste per day. So far, the farm receives weekly collections of brewer's grains from Molly Pitcher, trailer loads of spoiled produce from Project SHARE, and drop offs from the Carlisle Area School District. Due to COVID restrictions our outreach to farmers and students promoting anaerobic digestion systems has gone mostly online—please check out the fun and informative “Dickinson College Farm Biogas” video series on [YouTube](#) produced by our renewable energy outreach student Analisa Groble.



Farm Initiatives

COMMERCIAL DIGESTER DEVELOPMENT Matt Steiman has been heavily engaged with grant writing and project planning for the expanded anaerobic digestion project at the farm. When complete this project will consist of a commercial scale biodigester located between the College Farm and the Triple L dairy on land rented from Dickinson. We will combine food waste from the College and other local sources with cow manure from the dairy. The digester will convert the wastes to biogas and liquid fertilizer. Gas will be used to power a utility interactive generator to produce approximately 250,000 kWh of renewable energy per year. Additional environmental benefits include reduced manure and sediment pollution to the Yellow Breeches creek and diversion of food waste from the landfill resulting in reduced greenhouse gas emissions.

Total project cost will be about \$1.4M with over \$1.2M raised to date secured in grants, donations, and internal loan funds for the construction project, with completion expected in 2022 or 2023. Once up and running this showcase system will generate 200-300,000 kWh of renewable electricity per year from manure and food waste. The project will also generate \$20-30K per year in electricity sales and rent from the dairy—these will go to replenish the Green Fund and cover project maintenance in the future.

FARM LAB FARM Lab presents a pathway to realizing greater opportunities for students, faculty, and community members to engage in active learning and problem solving. As a multipurpose facility, FARM Lab will augment the current farm infrastructure to create a living laboratory capable of supporting year-round interdisciplinary learning, place-based research, collaborative initiatives, off-campus social activities, and greater revenue generation

Over the course of 2021, farm staff worked alongside college administrators to select an architecture firm capable to taking on this bold initiative. Ultimately, Re:Vision, a Philadelphia-based firm with proven experience in green design and construction was selected. Together with staff from Re:Vision, the College Farm hosted a visioning session in early November 2021. A group of thirty stakeholders including farm staff, Dickinson students, alumni, faculty, staff, and college administrators along with community partners convened for this half-day visioning session. The group reflected the range of ways that the College Farm engages with and supports its stakeholders, from student employees to regional sustainable agriculture research initiatives.

To read about the outcome of the visioning session, we invite you to read this exciting [report](#).

Fall 2021 Student Engagement Stats

Academic—200

Research—8

Weed-n-Feed—60

Pizza on the Plaza Events—500

Harvest Fest—300

Educational Outreach Programs—100

Discover Dickinson—10

Approximately **1,178** STUDENTS
engaged with College Farm in meaningful ways in the fall of 2021.

COLLEGE FARM STAFF

Jenn Halpin, *Director of the College Farm*

Matt Steiman, *College Farm Special Projects Manager*

Will Nelson, *Vegetable Production Manager*

Cheri Getty, *Packing House Coordinator*

Audree Khalishah, *Farm Education/Outreach Coordinator*

Mary Silva, *Farm Administrative Assistant*

We welcome any questions or requests for additional information and encourage you to stay updated on farm events and happenings by following our blog, liking our page on Facebook, or following our Instagram account.

FOLLOW US:  

[BLOGS.DICKINSON.EDU/FARM](https://blogs.dickinson.edu/farm)

Dickinson 

COLLEGE FARM