McKay Farm and Research Station Annual Report 2014-2015

Vision and Mission
McKay Farm & Research Station (MFRS) exists to advance the Unity College mission to train students in sustainability science by adding educational value to the student experience, facilitating quality research, and increasing the College’s impact in the community. The goal is for MFRS to operate as a cost-neutral center of Unity College.

Personnel
In 2014-2015 the Station was staffed by the Director, Field Station Technician, and two seasonal Production Assistants. Four work study students worked during the academic year. The 2015-2016 annual budget was approved for one additional full time Technician and two additional work study students.

Summary
The year of 2014-15 saw the development and approval of a Strategic Plan and Financial plan for the facility, piloting of a number of production/revenue generation activities, increased crop production capacity, engagement and commerce in the local community, and development of academic and community programming. Yearly expenses came in under budget with surplus funds earmarked for infrastructure and safety improvements to the facility.
Strategic Business Plan

Strategic Goals, Objectives, and Initiatives

GOAL 1: Enhance undergraduate education at Unity College

Objective 1: Develop programmatic support for the Unity College curriculum
   Initiative 1: Work with faculty, students, and staff to develop learning opportunities for Unity College students. These may include:
   1. Courses that meet regularly at McKay Farm & Research Station (ex. SA2883, other sustainable ag project courses)
   2. Courses that use McKay Farm & Research Station as the focus for a project or study (ex. Interpretive Methods, Art Explorations, Environmental Scenarios, etc.)
   3. Courses that visit McKay Farm & Research Station for field trips (ex. Pest Management, Entomology, Stream Ecology)
   4. Internships and independent research projects

Objective 2: Develop co-curricular opportunities for students
   Initiative 1: Work with student clubs with projects at McKay Farm & Research Station (e.g., FFA, Beekeepers club)
   Initiative 2: Develop McKay Farm & Research Station volunteer program for students and community
   Initiative 3: Work with Events Coordinator to develop McKay Farm & Research Station as a credible event space (e.g., poetry slam in the greenhouse)
   Initiative 4: Work with Summer Program on summer or alternative revenue programming (e.g., Seedling Production for Seniors)

GOAL 2: Facilitate research in sustainability science

Objective 1: Develop McKay Farm & Research Station physical plant as a credible field and greenhouse-based research station
   Initiative 1: Establish facilities plan, budgets, personnel plan, and financial plan
   Initiative 2: Make baseline facilities improvements and complete deferred maintenance

Objective 2: Develop Unity College partners for research
   Initiative 1: Develop financial and evaluation initiatives for Unity College faculty to prioritize research at McKay Farm & Research Station.
   Initiative 2: Establish McKay Farm & Research Station research partners network. Include faculty, community partners, local agriculture businesses, and research organizations

Objective 3: Develop funding for research
   Initiative 1: Work with Unity College development and other partners to identify appropriate research oriented grant opportunities

Objective 4: Execute research program
   Initiative 1: Establish project plans
   Initiative 2: Execute projects
   Initiative 3: Establish and execute assessment plan

GOAL 3: Establish McKay Farm & Research Station as a community greenhouse resource

Objective 1: Develop McKay Farm & Research Station physical plant as a credible community greenhouse
   Initiative 1: Establish facilities plan, budgets, grower/renter agreements, personnel plan, and financial plan
   Initiative 2: Make baseline facilities improvements and complete deferred maintenance

Objective 2: Engage in community and stakeholder planning to identify community needs and opportunities
   Initiative 1: Work with college partners like Maine Farmland Trust and MOFGA to host planning sessions
   Initiative 2: Identify priority projects and funding opportunities

Objective 3: Engage in outreach development to fund and execute priority projects
   Initiative 1: Identify funding sources
   Initiative 2: Engage necessary partners, community members, staff, faculty to complete projects

GOAL 4: Develop McKay Farm & Research Station as a greenhouse production and retail center

Objective 1: Develop McKay Farm & Research Station physical plant as a credible production greenhouse and retail facility
   Initiative 1: Establish facilities plan, budgets, grower/renter agreements, personnel plan, and financial plan
   Initiative 2: Make baseline facilities improvements and complete deferred maintenance

Objective 2: Develop production operation for revenue generation and production demonstration
   Initiative 1: Create institutional vegetable and bedding plants production and retail plans that support institutional local food production and education objectives
   Initiative 2: Execute production, demonstration, and retail plans
Action steps for effective program development

1. Gain Executive Staff approval for this plan and Financial Plan. Share with Senior Staff, then Faculty, and students for campus communication. Create a 2015-2016 budget based on approved financial plan.

2. Assemble an advisory committee of faculty, staff and student stakeholders from Unity College. The steering committee will exist to formalize a facility mission statement, provide expertise on project/enterprise development. Expectations will include participation in bi-annual planning retreats and campus and community ambassadorship.

3. Pilot projects with multiple benefits on a small scale (e.g., space rental, industrial hemp research, seedling and food crop production, vermicompost).

4. Engage stakeholders. During the initial planning period, we will gather and analyze input from a diverse group of stakeholders including: students, staff, and faculty at Unity College; local farmers; scientists and academics from neighboring institutions; partners at non-profit organizations. We will use a variety of methods to collect and utilize input from various sources: Surveys. Build on August 2014 survey instrument for faculty and staff. Modify for campus community as a web survey. Offer incentives for survey completion. Farmer focus groups. Work with Maine Farmland Trust and MOFGA to assemble a group of farmers to discuss research needs and opportunities. Key informant interviews. Identify stakeholders who have an important perspective on the opportunities and challenges of McKay Farm & Research Station.

5. Engage campus operational partners. The full endorsement and support of various departments on campus will be critical to the success of McKay Farm & Research Station. These departments include: Dining services, Facilities/Main-tenance, Sustainability. Work with the heads of these departments (and EVP) to strategize how to best work together and develop forward-looking systems that will meet the needs of all parties.

6. Develop the right suite of McKay Farm & Research Station staff positions - delineate responsibilities, timeline, budget justification. There are a number of

Financial Plan

McKay Farm & Research Station will approach fiscal neutrality through a diversified revenue stream that allows for contributions from several sources.

Financial neutrality is defined as achievement of annual revenues that meet or exceed operational costs. Currently (2014-15) operations = $119K. The current revenue goal is $30k. The five year revenue goal is $150k plus any additional revenue needed to offset any additional costs.

The main greenhouses at McKay Farm and Research Station utilize a number of energy-saving technologies.
Activities

Strategic plan, financial plan, and permanent facility name developed and approved

- Developed comprehensive strategic plan for the facility including vision and mission statement (above), goals, objectives, and initiatives
- Developed multi-year revenue neutral financial plan as well as non-financial evaluation metrics
- Developed and executed business plans for multiple enterprises
- Presented Strategic Plan and financials to UC Executive Staff, Senior Staff, faculty meeting, Board of Trustees, and Unity Rotary Club
- Permanent name “McKay Farm & Research Station” and roadside sign design approved by Senior Staff. (Prior working name was “Half Moon Gardens & McKay Agricultural Research Station”)

Research

- Worked with community partners from Fedco, Johnny’s Selected Seeds, Mt View High School, to submit 2 research grant applications totaling of $230,000 in requested funds. The grants (to USDA NIFA and NE-SARE) are under review.
- Planted over 2,000 row feet for overwintered Brassica oleracea and Phaseolus vulgaris seed production research trials.

Production of food and flowers for campus and local community

- Tilled new ground for a 2/3 acre vegetable garden and research plots in Fall 2014, cover cropped over winter and planted with fall crops for UC Dining Services.
- Developed fall crop production plan in partnership with UC Dining Services to provide the dining halls with about 6,500 lbs fresh produce, and an anticipated $19,000 in revenue for the Farm.
- Developed ~0.25 acres of certified organic cut flower gardens for campus and a U-pick opportunity for the local community.
- Grew fall, winter and spring produce for campus and community customers with total sales of over $6,500 and 1,000 lbs of produce sold, equaling over 8,000 servings of fresh, healthy food.
- Grew ornamental plants for on-campus events and sales with over $600 in sales (Christmas plant sale, dorm window boxes)
- Donated $113 worth of food, plants and supplies to campus groups (game dinner, fall bulbs, FFA)

Retail and wholesale seedling sales

- Achieved retail sales totaling over $12,000 during May and June with over 600 walk-in transactions. Sold an estimated 15,000 flower, vegetable, and herb seedlings to the community.
- Wholesale seedling sales of over $2,000 to UC Facilities and $550 for graduation flowers. Also grew over 13,300 organic vegetable seedlings under contract for Cultivating Community, a non-profit agricultural project based in Portland, worth $2,800 and representing thousands of pounds of vegetables.
- Sold $700 worth of plants on campus for student dorm beautification.

Achieved retail sales totaling over $12,000 during May and June with over 600 walk-in transactions.
Campus Integration

Formal course use in 2014-2015
• Courses that met regularly at McKay Farm: 1 (Cold Season Food Production)
• Courses that used McKay Farm as the focus for a project or study: 5 (Interpretive Methods, Pest Management, Field Research Techniques, GIS, Geology of Maine)
• Courses that visit HMG for field trips: 4 (Entomology, Stream Ecology, Applied Mathematics, Fundamentals Of Organic Horticulture)
• Internships and independent projects: 4 (Documentary film, Vermicomposting production and business plan, Environmental Scenarios and Solutions, Interpretive Methods prospectus and wayside exhibits)

Co-curricular opportunities
• Student volunteers: 12 individual volunteers working a total of 35 hours, 9 advertised volunteer opportunities,
• Social Media outreach: 31 total posts to the FB page, 132 total likes
• Events: Center for Sustainability and Global Change Pig Roast and semester kickoff (October 2014)
• Provided employment and training for 5 work study students encompassing food and seedling production, enterprise and marketing, crop scheduling and planning, and customer service.

Community Engagement and Service

Greenhouse Rental
• Piloted a rental program with growers in Spring 2015 for 4 months. Rented a total of 16 benches in GH1 during the height of rentals in May. Total rental revenue was $3,850 with a total of 9 local growers. 6 growers completed an end-of-season evaluation survey, with 5 out of 6 either "very likely" or "extremely likely" to use the service again, and 4 of 6 extremely or very likely to recommend the greenhouse to a friend. Several growers expressed their anticipation of much higher grower demand next season for rental space, and the majority of growers expressed gratitude that the service and facility was available to them.

Grant proposals
• Partnered with Veggies for All (Maine Farmland Trust) to submit a community seedling production ($120k) grant to Sewall Foundation in March 2014. The grant was not funded, but representatives from the Foundation followed up with an informational meeting at tour at McKay Farm in late July 2015.
• Collaborated with MFT on one additional USDA Farm to School grant application with an estimated $16,000 revenue line for McKay Farm.

Events
• Music venue for Open Space Festival in Thorndike (June 2015)

Product Donations
• ~$200 worth of seedlings donated to ~8 community charities

Safety Improvements
• Purchase and install of new first aid kits, eyewash stations, wet floor signs
• Removal of hazards
• Mandatory staff safety orientation

Improved Infrastructure
• Paved entryway ramps
• Landscape maintenance and cleanup
• Pond cleanup and pump purchase

Improved Production capacity through site development and equipment purchase and repair
• Developed in-ground production capacity for hoop house
• Purchased hand tools and 2-wheel tractor
• Purchased rototiller for tractor and field-level management
• Purchased tools for repairs
• Developed cut flower garden for beauty and flower sales
• Purchased hi-hose system for more efficient watering in GH1
• Installation of drip irrigation infrastructure to increase field water use efficiency
• Repaired forklift

Improved Energy Efficiency of Facility
• Greenhouse thermostats to reduce temperature during winter for more efficient thresholds
• Labeling oil tanks for better monitoring
• Repaired solar thermal radiant benchtop system
Goals for 2015-16

Increase campus integration and facility use
Establish McKay Farm and Research Station Advisory Committee
Develop incentives for student and faculty research
Increase volunteer opportunities and student club involvement
Coordinate with UC Animal Barn and CWCE major to develop livestock pilot project
Coordination with Marketing/Development Depts. to sponsor events
Increase overall area of greenhouse utilization by 33% (from ~15,000 sf currently to 20,000 sf)

Increase capacity, profitability and sustainability of production activities
Seedling sales
  Improved marketing/promotion
  Increased seedling volume and variety based on prior year(s) data
Fall/winter crop production
  Establish in-ground production of fall and winter crops in field and hoop house
  Improve wash & pack station
Cut flower garden
  Add perennials
  Develop wholesale accounts
Summer field production
  Increase yield and cropped area
  Recover three greenhouses in late summer/fall 2015: GH1, GH5, and hoop house
Warehouse and barn reorganization

Continue infrastructure improvements and complete deferred maintenance
Install new roadside sign
  Improve drainage in front showroom
  Improve coordination with Facilities Dept to maintain a safe and functional work environment

Engage in funded research
Seed production
  Variety trials and lot growouts (Fedco)

Increase community involvement and develop robust community partnerships
Host Grand Opening event in fall 2015
  Dedicate 3000sf of greenhouse space to partnership use (including rental)
Improve greenhouse rental program
  Outreach to potential grower/renters
  Develop streamlined fee system with accurate cost accounting
  Establish appropriate compensation for coordinator

Coordinate with Sustainability Dept and other interested parties to develop long term environmental sustainability plan
Feasibility studies for:
  Winterization/heat conservation improvements
  Alternative energy sources
  Compost production
  Energy audit of residence and efficiency improvements
  Improved metering of heat fuel and electricity use