

## MDARD Horticulture Fund 2023 Final Report – Horticulture Bootcamp 2023

### Principal Investigator

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### Problem Statement

The Michigan nursery and ornamental horticulture industry currently faces a severe labor shortage for entry-level to mid-level workers. Demand for these workers already exceeds the current supply in both domestic and H2A immigrant labor markets, creating the potential to drastically increase production costs for associated plant commodities. Establishment of a rapid horticulture skills training pipeline can ease labor scarcity while also lowering the barrier to entry for motivated workers seeking to make a career change. Providing these vocational opportunities to underutilized segments of the workforce should be considered as part of the holistic strategy to secure labor for the future growth of the industry. Training provided to this newly developed workforce can be communicated using an accessible database through which potential employers can more effectively screen applicant qualifications.

### Project Description

A pilot training program was established to provide an underutilized demographic of workers with the appropriate skills to begin entry- to mid-level employment in the nursery and ornamental horticulture industry. The program process pipeline is visualized in figure 1.

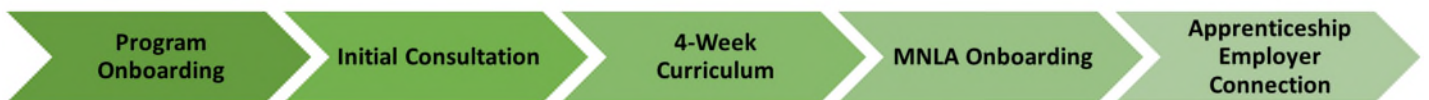


Figure 1. Program process timeline

### Objectives and Outcomes

**Objective 1: Recruit an underutilized segment of the workforce by providing military veterans with the training they need to enter the nursery and ornamental industry.**

Four individuals were recruited through this program and employed at the Veterans Therapy Garden of Paw Paw Michigan. Their work established the physical infrastructure supporting the long-term goals of the Horticulture Bootcamp program. Participant #1 has continued working via self-employment following his pesticide applicator education and certification, offering landscaping and gardening services in the Kalamazoo and Battle Creek counties. Participant #2

operates a publicly funded community garden in the Edison neighborhood of Kalamazoo, providing free food to low-income communities. Participant #3 completed her undergraduate internship project at the Veterans Therapy Garden of Paw Paw which will support the long-term educational goals of the Horticulture Bootcamp program. Participant #4 completed over 200 hours of community service and horticulture training as part of his vocational rehabilitation goals.



Figure 2. Drone imagery of the Veterans Therapy Garden programming season 2023



Figure 3. Program participants completing various projects throughout the Veterans Therapy Garden of Paw Paw, MI.

Objective 2: Institute a skills certification program which allows employers to screen applicants more rapidly.

Curriculum development was accomplished through teaching weekly courses at the Battle Creek VA Medical Center’s Vocational Rehabilitation program and utilizing informal feedback to modify the curriculum content (see figure 4). This effort hosted **64 weekly classes** delivered to **72 unique participants** recovering from substance abuse or post-traumatic. The total number of contact hours was approximately **412 hours** over this period. The resulting curriculum is hosted on MSU Extension’s Desire-2-Learn digital platform and will be available as recorded lectures and activities for self-paced completion with instructor supervision (see table 1).

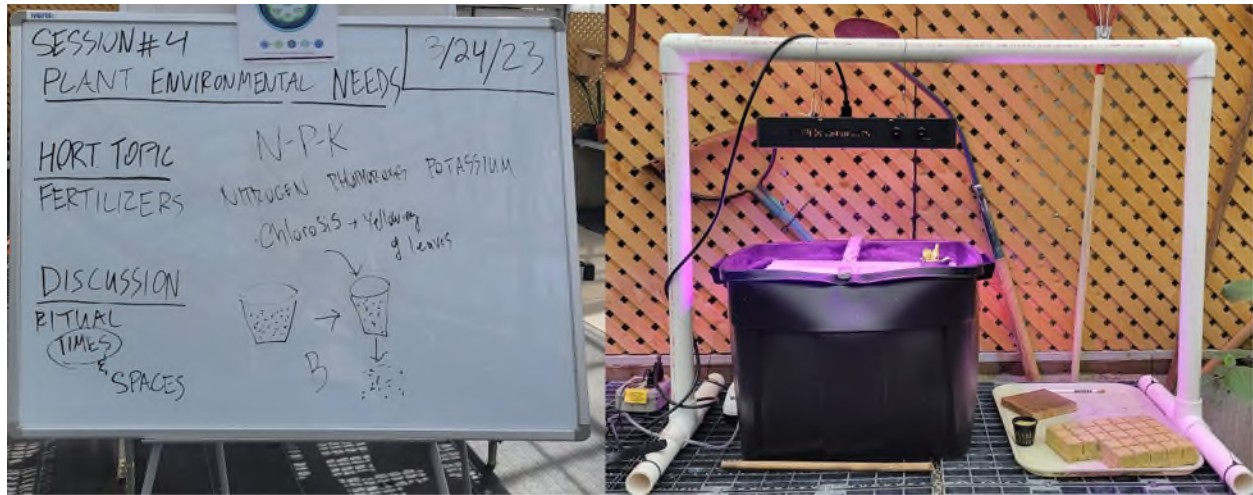


Figure 4. Curriculum development at the Battle Creek VA Medical Center benefited from portable aids to facilitate discussion and evaluate educational needs of veteran audiences interested in horticulture education.

	Topic 1	Topic 2	Topic 3
Week 1	Plant Growth	Soils and Nutrition	Propagation
Week 2	Human Health in Green Industries	Landscape Plant Maintenance	Container Plant Production
Week 3	Hydroponics	Lawn Alternatives	Invasive Plant Management
Week 4	Tree Disease IPM	Landscape Water Conservation	Landscape Irrigation

Table 1. Weekly schedule of horticulture topics

To supplement the formal curriculum, a 40,000 square ft teaching garden (see figure 2 and 3) with a greenhouse structure was constructed, including three demonstration gardens to support the hands-on training of future program participants: the pollinator garden, ornamental grass garden, and propagation garden. These plantings include signage that guides participants through applied activities that re-enforce concepts learned in lectures.



*Figure 2. Community volunteers and program participants worked together to build the different educational features of the Veterans Therapy Garden, including a 9x17' snow-resistant greenhouse.*

Through a partnership with the Michigan Nursery and Landscape Association (MNLA), participation in Horticulture Bootcamp classes grant graduates of the program partial fulfillment of MNLA's apprenticeship certification. See figure 2 for an excerpt of program agreement for 2023-2024. Training records with MNLA will include a "veteran" designation to be shared with apprenticeship program employers.

1. Participants who complete MSUE's training course will be eligible for their educational hours to count towards partial fulfillment of MNLA's requirement for the Landscape Management certification.
2. The educational hours awarded for partial fulfillment will be determined at the sole discretion of MNLA's program manager and are subject to modification.
3. Following the participant's completion of the course, the MSUE program manager will communicate the necessary information to the apprenticeship program manager for MNLA to establish a training record.
4. Following the establishment of an MNLA training record, communication with employers participating in the apprenticeship program will be the responsibility of the MNLA apprenticeship program manager.



*Figure 2 Program reciprocity agreement, Michigan State University Extension Horticulture Bootcamp and Michigan Nursery and Landscape Association.*

Objective 3: Establish career development services which prepares participants to connect with employers and assists participants in the use of state and federal veteran benefits to support their employment, education, and other professional development goals.

Built into the Horticulture Bootcamp's curriculum is a four-part series of activities which provide opportunities to enhance career development skills for veterans. These activities include "Resume Refresh", "Portfolio Building", "Horticulture Industry Opportunity Identification", and "Mock Interview".

During program onboarding, participants are briefed on four key resources to support their goals: Post 9/11 GI Bill (MGIB where eligible), Michigan Farmer Veteran Coalition (FVC), county Veteran Services Office (VSO) standard services, and relevant provisions within the VA Home Loan Guaranty Program related to agricultural/horticultural business development.

## Financial Summary

Description	Budgeted Amount	Actual Expense	Difference	Notes
Nonexpendable Equipment	\$ 6,300.00	\$6,300.00	\$0	See procurement record below
Materials and Supplies	\$ 3,400.00	\$3,763.70	\$363.70	Increased expenditure attributed to greenhouse foundation costs
Publication	\$600.00	\$281.93	(\$318.07)	Publishing software cost for curriculum content editing
Participant Incentives	\$800.00	\$0	(\$800.00)	Expense was unnecessary to complete objectives
Consultant Services	\$0	\$48.60	\$48.60	N/A
Total	\$11,100.00	\$10,328.66	\$705.77	

## Additional Information



equipment  
purchase record - gr