

Development of the Organic Vegetable Farm Manager

Apprenticeship Program for Wisconsin

by

Laura Jessee

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Introduction

For the past two years, stakeholders have been working together to develop a formal apprenticeship program for diversified, organic vegetable growers. The collaborative efforts of Julie Dawson's lab (University of Wisconsin-Madison Horticulture), Claire Strader (UW-Extension-Dane County and FairShare CSA Coalition), organic vegetable farmers, and the Department of Workforce Development have made this project possible. Moving from broad discussions of education goals to the finer points of on-farm tasks, stakeholders crafted a unique Organic Vegetable Farm Manager Apprenticeship Program for Wisconsin. The apprenticeship program was finalized in December 2017, and the first apprentice is enrolled for Spring 2018.

Two graduate students in the UW-Agroecology program facilitated in the design and support for the apprenticeship program – Laura Jessee and Alexandra Steussy-Williams. This introduction and Chapter 1 provide a joint overview of this effort as a fulfillment of the *Professional Practice* option of the Agroecology Program.

Our final project reports include a description and presentation on the process of developing the apprenticeship program, detailing our role in its development, and next steps in its evolution. Our project is not solely a report on the apprenticeship program as it currently stands, but an evaluation of how it arrived and where it's going. Even the finalized program is still in process. The apprenticeship program is a story during which the original intended outcome, the characters, and basic structure, all changed. The process of its creation lends insight to the final product and informs future development.

Chapter 1 outlines the process of creating the apprenticeship program. In Chapters 2 & 3, Laura Jessee analyzes different aspects of the creation process. Chapter 2 focuses on

farmer participation and chapter 3 lends itself to theorizing race within sustainable agriculture education.

Chapter 1.

The Apprentices Program Creation Process

Over a two-year period, various stakeholders have participated in creating an organic agriculture apprenticeship program in the state of Wisconsin. The entire process will be outlined in this chapter, including a description of the process of developing the apprenticeship program, detailing our role in its development, and next steps in its evolution

Need for Program:

The principles and practices of farming must be learned as one would learn any other skilled profession: through experience and training by an expert in the field. An increasing number of aspiring farmers do not grow up on farms, with up to seventy-five percent of farmers under the age of forty not having grown up on a farm (New Young Farms Coalition Survey, 2017). The traditional system of learning farming skills while growing up in a farming family is declining, leaving a gap in knowledge transfer. A survey of novice vegetable growers conducted by the Wisconsin Department of Agriculture, Trade, and Consumer Protection identified the primary barriers to successful farming as lack of income, lack of access to capital, and lack of production knowledge (Paine et al. 2015).

There are a multitude of ways of learning about farming. Knobloch (2003) stated that learning experientially in authentic contexts has been a foundational model of teaching and learning in agricultural education. Additionally, in a 2010 survey by Franz et al. of eighty-six farmers, ninety-nine percent prefer learning through hands-on activities and eighty-five percent preferred one-on-one learning methods. While there are many short-term training

opportunities for beginning farmers, few combine hands-on and formal coursework in a structured manner that allows aspiring farmers to thoroughly learn the profession.

There are few challenges more daunting than who will be the next generation of America's farmers. Recognizing this problem, the Secretary of Agriculture, Vilsack challenged the committee to set a goal for one thousand new farmers as a result of the 2012 Farm Bill to revitalize rural communities and support a new wave of farmers. The apprenticeship program responds to a direct need in the agricultural field: the need for accessible, holistic, and hands-on apprenticeship programs to supply regional, organic food systems. Access to local, organic food supports the food security and health of a growing world population. In 2016, the organic food market grew 8.4%, compared to a measly 0.6% growth rate in the overall food market (Organic Trade Association, 2016). This yearly growth has been consistent for a decade, mirroring the demand for organic produce.

The availability of local, organic food depends on the farming expertise of a given area. The more skilled workers trained in sustainable food production, the more likely those farmers will be the ones to occupy land and start operations. Empowering people to grow food for their region, allows a region to be more self-sustaining, depending on fewer exports (Martinez, 2010). Growers and consumers alike begin to recognize care for natural resources as essential for food and livelihood. Recognizing their own backyard (or their neighbors') as a source of food, consumers feel more connected to and invested in the food system. This sense of investment in local food and natural resources can direct spending patterns and drive local economies (Martinez, 2010). Training beginning farmers in sustainable food production practices is the first step in creating a thriving, local food system. Additionally,

increasing the number of farm managers will support small businesses and meet the growing market demand for sustainably raised vegetables.

Process

A. Inception Meeting

The idea for the apprenticeship program was born from a conversation between Claire Strader (UW-Extension Dane County and FairShare CSA Coalition) and Julie Dawson (UW-Madison Department of Horticulture) inspired by the success of the Dairy Grazing Apprenticeship (DGA) which also began in Wisconsin. In March of 2016, Strader and Dawson organized a stakeholder meeting to gather farmers, agricultural educators, and representative from the Department of Workforce Development (DWD) to discuss the idea. Thirteen farmers, eight agricultural educators, and two representatives from DWD attended the Stakeholder meeting. Agricultural educators were from non-profit organizations like the Farley Center for Peace Justice and Sustainability, Hunger Task Force, Emerging Farmers Program, Michael Fields Agricultural Institute, Center for Integrated Agricultural Systems (CIAS), Angelic Organics Learning Center, and FairShare CSA Coalition. Strader was successful in securing a SARE mini-grant to compensate farmers for their time and travel.

The stakeholder meeting was a foundational step towards creating a formally recognized organic vegetable apprenticeship program in Wisconsin. The goal of the stakeholder meeting was to gather a diverse group of stakeholders to identify priorities of the farmers and to ensure that an apprenticeship program would meet needs, emphasize strengths, and attract farmers from all backgrounds. During the meeting, farmers listed reasons for developing an apprenticeship program. Reasons included supporting the local

food system, filling the gap in agricultural knowledge transfer, standardizing training, improving employee quality, screening, retaining skilled employees, and improving farmer-to-farmer connections. All stakeholders stated their commitment to participating in the creation of the apprenticeship program.

B. DACUM 1

After receiving positive feedback from the farmers, stakeholders turned to the Department of Workforce Development (DWD) to facilitate the creation of the curriculum and standards of the apprenticeship program. The apprenticeship curriculum was designed through a process called DACUM: Designing A Curriculum (Norton, 1998). The DWD defines DACUM as the foundation for development of education, training and performance improvement interventions, using information gathered from high-performers within an occupation during a focus group process. The high-performers within an occupation are referred to as subject-matter experts. The subject-matter experts for the development of this apprenticeship program were twelve organic vegetable farmers. DWD staff are trained to use DACUM to facilitate subject-matter experts in creating federally registered apprenticeship programs. The DACUM process is also used by secondary and post-secondary educators, business-industry trainers, and government-military trainers to create curriculum.

The DWD provided a structure for the development of the apprenticeship program that staff outlined in a presentation at a meeting dubbed ‘DACUM 1.’ DWD staff, Strader, Dawson, subject-matter experts, a representative from Pennsylvania Association for Sustainable Agriculture (PASA), technical college representatives, and we were present for DACUM 1. Staff at DWD shared guidelines for the state-mandated apprenticeship model.

The model calls for ninety percent of training to take place on-the-job and ten percent of training to take place in a classroom. Apprentices will be paid an hourly rate during their classroom training; the DWD labels this classroom experience as Paid-Related Instruction (PRI).

On-farm learning is the most substantial component of the apprenticeship program, while classwork curriculum makes up a smaller proportion of the program requirement. The on-farm learning expectations are detailed in a Job Book. The Job Book is a skills manual that would serve as a reference and a checklist for farmers and apprentices in the program. The Job Book ensures that apprentices adequately complete required tasks and in so doing, leave the program having acquired foundational skills. The final Job Book (as defined by the DWD) is broken down into a series of Duties, Tasks, and Steps.

Duties describe large areas of work in performance terms. They are general areas of responsibilities that are accomplished on a regular basis. Duties consist of one verb, one object, and sometimes a qualifier, and can stand alone. As seen in Figure A, within each Duty were Tasks. Tasks are sequences of actions that get checked off by the farmer-instructor when the apprentice demonstrates efficient, assignable, meaningful units of work. There are typically ten to twelve Tasks per Duty. Finally, each Task is made up of a series of Steps, which are specific elements required to perform a Task. Tasks can be performed during a short period of time and independent of other Tasks, have definite beginning and end, can be observed and measured. Each Task tends to have at least three Steps; each Step must be a watchable action. For example, for the Task of Till a Field, the steps may be:

1. Choose an implement suitable for desired outcome
2. Attach implement to tractor

3. Used desired implement

Organic Vegetable Growers DACUM * January 27, 2017

DUTY	TASKS						
A Manage Fields	A1 Perform primary tillage	A2 Prepare seed beds	A3 Lay plastic mulch	A4 Assess field conditions	A5 Apply compost or fertilizers	A6 Perform stale seed bed preparation	A7 Mow and incorporate crop residue into the soil
	A8 Seed cover crop	A9 Mow cover crop	A10 Terminate cover crop	A11 Perform deep tillage	A12 Maintain non-production areas		
B Propagate Transplants	B1 Seed vegetable crop into trays	B2 Maintain proper temperature and moisture levels	B3 Maintain proper ventilation	B4 Prepare greenhouse growing media	B5 Harden off seedlings	B6 Maintain greenhouse equipment and structure	B7 Pot up seedlings
	B8 Record greenhouse planting	B9 Maintain seedling fertility	B10 Perform greenhouse sanitation	B11 Control greenhouse pests and diseases	B12 Assess germination and seedling growth		
C Seed and Transplant Crops	C1 Read the field plan	C2 Assess field conditions and plant status	C3 Determine planting method	C4 Prepare equipment, supplies, seeds and transplants	C5 Sow vegetable seeds in fields	C6 Transplant crops using hand or mechanical tools	C7 Record seeding and planting
	C8 Irrigate seeds/transplant if necessary						
D Maintain Crops	D1 Assess plant health	D2 Prepare equipment and supplies	D3 Determine cultural needs	D4 Prune plants	D5 Thin plants	D6 Trellis plants	D7 Blanch plants
	D8 Hill plants	D9 Irrigate plants	D10 Apply row cover	D11 Perform side dressing and/or foliar feeding	D12 Record crop maintenance activity		
E Control Weeds	E1 Assess potential or actual weed pressure	E2 Identify weeds	E3 Determine weeding method	E4 Perform non-mechanical weeding	E5 Perform mechanical weeding	E6 Perform mulching	

Figure A. Farmers organized seasonal tasks into larger categories called duties.

The Job Book also contains relevant information for the organic farming trade, like tools, job titles, knowledge and skills, providing a solid foundation for a training program.

DWD staff facilitated the subject-matter experts in unpacking the essential tasks of their profession at DACUM 1. A DWD facilitator encouraged the farmers to think like educators by orienting them to brainstorm and develop a skills list. Each farmer wrote up to ten common daily tasks on post-it notes and placed them on the wall. Farmers then organized the post-it notes into “common buckets.” Those groupings of common activities

were identified and labeled as “Duties.” The activities on each post-it note were called “Tasks.”

DWD facilitators were unfamiliar with the daily responsibilities and jargon of organic vegetable farming. Farmers were forced to explain terms to the facilitators that would be obvious to someone working in their field. Explaining daily farm tasks at a basic level helped farmers identify learning objectives for the apprenticeship program. During DACUM 1, and throughout the rest of the process, decision-making was done through discussion and consensus. The goal was for the final apprenticeship program to truly represent farmers.

C. Validation survey

The Duties and Tasks outlined by the subject-matter experts at DACUM 1 were sent to organic vegetable farmers, extension agents, and agricultural non-profits around Wisconsin for feedback in the form of an online validation survey. The survey allowed stakeholders to mark the frequency and criticality of each Task; these two values were used to determine the overall importance of the Duties and Tasks. Results of the survey allowed us to identify any information that subject-matter experts may have overlooked during the first DACUM.

D. DACUM 2 and Follow-up Phone Call

The validation survey results informed subject-matter experts as they reviewed the Duties and Tasks during DACUM 2. DWD staff, Strader, Dawson, subject-matter experts, technical college representatives, and we were present for DACUM 2.

Facilitated by DWD staff, farmers finalized the Duties and Tasks and then divided them into three categories: best learned in a classroom, best learned on-farm, or best learned in both settings (Figure B). These categories would distinguish tasks that would be laid out in the Job Book and the tasks that would be covered by the in-class curriculum. Next, farmers voted on whether the apprenticeship program would be based on hours completed or tasks completed. The farmers chose a competency, or task-based, model. By basing program requirements on mastering competencies rather than time spent in program, farmer-instructors could be more flexible with the time necessary to complete the apprenticeship program. Subject-matter experts agreed on a rough program length of 1.5 years, or two farm seasons. DWD staff informed stakeholders that this apprenticeship program would be the first competency-based model in Wisconsin. Finally, the farmers agreed with the state statute requirement stating that the Wisconsin Technical Colleges would provide paid-related instruction and voted to table the addition of non-profit or conference education requirements.

Organic Vegetable Growers DACUM * January 27, 2017
 Finalized 2/17/2017

	OJT	PRI	BOTH
A Manage Fields			
A1 Consult soil fertility plan	X		
A2 Perform primary tillage	X		
A3 Prepare seed beds	X		
A4 Lay plastic mulch	X		
A5 Assess field and weather conditions			X
A6 Apply compost or fertilizers	X		
A7 Perform stale seed bed preparation	X		
A8 Mow and incorporate crop residue into the soil	X		
A9 Seed cover crop	X		
A10 Mow cover crop	X		
A11 Terminate cover crop	X		
A12 Perform deep tillage	X		
A13 Maintain non-production areas	X		
B Propagate Transplants			
B1 Consult planting schedule	X		
B2 Seed vegetable crop into trays			X
B3 Maintain proper temperature and moisture levels			X
B4 Maintain proper ventilation			X
B5 Prepare greenhouse growing media	X		
B6 Harden off seedlings	X		
B7 Maintain greenhouse equipment and structure	X		
B8 Pot up seedlings	X		
B9 Record greenhouse planting	X		

Figure B. Farmers organized tasks into those taught in On The Job (OTJ), in Paid-Related Instruction (PRI), or both.

DACUM 2 ended in two distinct conflicts that could not be resolved. Subject-matter experts discussed the target audience for the apprenticeship program and managerial responsibilities of apprentices. The first question of debate centered around the audience of the program: Are we attracting prospective organic vegetable farm owners or farm managers? Farmers emphasized the difficulties of finding well-trained farm managers and the saturated organic vegetable market in the Madison area. No clear consensus emerged. The second debate dealt with state regulations. The DWD does not allow apprentices to take supervisory positions in which they train or manage other employees. Subject-matter experts insisted that supervision was part of the required responsibilities of any vegetable farm employee and would especially be true of an apprentice, committed to at least two seasons on a farm. These discussions had to be tabled for a later date.

Farmers were asked to complete a survey after reflecting on these discussions. Following the survey, a handful of the farmers discussed title and managerial responsibilities further during a conference call. The farmers concluded that an organic manager position would be more appropriate for the temporal and spatial context of the program. The farmers officially decided to change the title of the program from the Organic Vegetable Grower Apprenticeship Program to the Organic Vegetable Farm Manager Apprenticeship Program. The change reflected what the current organic growers thought would be most beneficial for the industry and for the apprentices. The title change to “farm manager,” by definition entails supervision, allowing for apprentices to assist farmers in managerial tasks.

E. Working groups

To lay out the competencies for the apprenticeship program that would be required on-farm and in the classroom, stakeholders divided into two working groups. Typically, DWD staff would continue to facilitate subject-matter experts within their working groups. However, the working group sessions would take place during the summer and would require multiple meetings. During their busy season, farmers would not be able to meet to discuss and finalize requirements for the program. Drafts of both the Job Book and the course curriculum had to be ready by November 2017 to start enrolling apprentices by Spring 2018.

To meet our deadline and ensure that subject-matter experts were still able to participate in the process, we worked with Strader to complete a Job Book draft and gather feedback from farmers. Dawson and Val Dantoin, from Wisconsin Technical Colleges, teamed up with farmers to create the course curriculum.

The Duties and Tasks finalized during DACUM 2 were the beginnings of the Job Book. The DWD required a list of Steps designated to each Task. We worked with Strader to create a draft of Steps for each Task. We created a survey showing our proposed Duties, Tasks, and Steps, and sent it to the farmers for approval (Figure C). Each farmer was sent three Duties, and each Duty was reviewed by at least two farmers. Most farmers responded via email but some requested phone surveys. One farmer called from the field as his tractor was malfunctioning and he couldn't be by his computer. Our role was to read each Step for each Task to those farmers who called, and to take down their comments or suggestions. We did everything possible to ensure that the farmers were able to shape the Job Book.

Organic Vegetable Apprenticeship Job Book Development					
Duty	To be completed by: Mike Noltnenwyss, Chris McGuire	No Change	Drop Step	Needs Clarification	Notes
Task	Step				
B Propagate Transplants					
B1 Consult planting schedule					
Task Change: Eliminated this task because it is really just a step in task B2					
Do you agree with elimination of task B1 Consult planting schedule? If not, why?					
B2 Seed vegetable crop into trays					
	Consult planting schedule				
	Fill flats with potting mix at appropriate moisture level				
	Dibble flats to create planting holes as appropriate				
	Place appropriate number of seed in cells using hand or mechanical means				
	Cover seed				
	Label flats				


Figure C. Farmer feedback was collected for each step of every task using an excel spreadsheet.

Some farmers disagreed with each other on how to shape specific steps. As we gathered feedback, we looked for consensus and highlighted differences to bring to the discussion at the meeting in November. The DWD requires that eighty percent of the Job

Book be standardized across farms. Up to twenty percent can be different from farm-to-farm. The flexibility in the curriculum allows for a larger pool of farmer educators to participate in the apprenticeship program. Apprentices may visit other farms to complete all Tasks of the Job Book. We typed up a draft of the Job Book and the representative group of twelve farmers were able to discuss and approve the content.

Dawson, Dantoin, and a few subject-matter expert volunteers worked to develop the course curriculum, which would make up about ten percent of the apprenticeship program. Based on the estimated length of the program, DWD staff recommended a 114 hour-minimum for training in the classroom. The Wisconsin Institute of Technical Colleges (WITC) agreed to provide space for the apprenticeship program with short courses offered in the winter. Short courses would allow less frequent time commitment of the apprentices. Additionally, the courses would be shaped around the content needs of the apprenticeship program; apprentices would not have to work around existing coursework or availability of classes.

Dantoin, who is also an organic farmer, bridged the agricultural and educational world to create the course curriculum structure. The workgroup organized an outline of three courses based off the paid-related instruction material identified during DACUM 2. One course would focus on organic systems, planning rotations, fertility, and field management; the curriculum for this course can be seen in Figure D. One course would focus on production, including greenhouse management and food safety. The last course would cover business management and marketing. Dantoin and the working group lumped together related tasks into courses that were feasible for both the apprentices and the technical college system.



50-xxx-xxx OVGFM 1 - Organic Farm Systems
Course Outcome Summary

Course Information

Alternate Title Organic Vegetable Farm Manager Apprenticeship Related Instruction

Description Introduces organic and systems approach to vegetable farming. Examines crop rotation plans; weed, pest, and disease plans; soil fertility and conservation plans; and organic certification paperwork. In addition, apprentices examine career pathways in organic vegetable farming and begin a career plan.

Career Cluster Agriculture, Food and Natural Resources

Instructional Level Technical Diploma

Total Credits 1.50

Total Hours 54.00

Program Outcomes

1. Manage fields
2. Control weed, pests and disease
3. Implement farm production plan
4. Assist with managing employees

Linked DACUM

Title Organic Vegetable Grower Farm Manager DACUM

Target Tasks

A5 Assess field and weather conditions

E1 Take steps to prevent weed and weed seed formation

F1 Take steps to prevent pests and diseases

J14 Acknowledge the importance of work-life balance

Figure D outlines the description, outcome, and tasks of the Organic Farm Systems course.

F. Final approval

On December 12th, 2017, subject-matter experts, DWD staff, Dawson, Strader, Dantoin, and we met to discuss final points and give stakeholder approval for the Job Book and the course curriculum developed by working groups. First, farmers discussed the minimum qualifications for applicants and sponsors (farmer-instructors) of the apprenticeship program. Minimum qualifications for applicants would be 18 years of age or more; a high school diploma, GED, or equivalent; a valid government-issued photo ID; and physical ability to perform tasks. Many of these requirements agreed upon were the minimums imposed by the DWD. There was disagreement about the minimum qualifications for sponsors. Subject-matter experts agreed sponsorship would require a current, valid organic certification from an accredited organization. However, conflict arose

concerning the minimum length of time that a farmer should have owned or managed a farm to be a farmer-instructor.

Farmers agreed that length of time a specific farm has been in business might not account for a farmer's full work experience. The DWD staff would be able to vet farmer-instructors for number of years a farm has been in business based on the accessibility of tax records. All farmers agreed that the farm where an apprentice is employed needs to have been in business for at least one year. However, it would be difficult for DWD staff to validate how long an individual has worked in farm managerial or ownership positions. DWD staff suggested that a third-party sponsor be considered for the program. Strader offered FairShare CSA Coalition as a possible sponsor. Further discussion and a decision will come after the program has been officially approved by the bureau of workforce development.

The DWD requires apprentices to be paid an hourly wage, with a minimum of thirty-two hours a week. Farmer-instructors can choose what they pay apprentices individually, but the apprentice must earn at least sixty percent of what a journey worker, or skilled organic vegetable farm worker, makes on average over the entire course of the apprenticeship program. DWD staff said that the Bureau of Apprenticeship will provide data on average wages per county for an organic farming journey worker. The increase in wages can be linked to proficiency in competencies and/or to anything the farmer thinks is relevant.

The farmers voted to account for seasonal work cycles; the apprentice contract would pause and become "unassigned status" when work is not available and resume "active status" when it is. This would entail apprentices working from when they arrive in March until the

season slows down in October or November. If farmers can employ apprentices year-round, the apprentices would be able to work part-time in winter while taking classes.

Farmers debated on how many crops a farmer educator must have to take part in the apprenticeship program, could a farmer growing only onions host an apprentice? Subject-matter experts decided there would be no crop minimum for farmer-instructors and no direct marketing related task requirements. All farmers agreed that “Operate Equipment” should be added as a Duty. The rest of the Job Book and the course curriculum were approved by farmers. The final Job Book includes a record number of competencies that an apprentice must be able to accomplish before becoming a journey worker. There are typically six to twelve Duties per profession; thirteen were approved for the organic vegetable farm manager apprenticeship program.

The final approval meeting ended with a recommendation from DWD staff that the apprenticeship program begin in 2018, sponsored by individual farms. The participating farms would have support with outreach and education from a collaboration of outside parties, such as UW-Extension-Dane County, FairShare CSA Coalition, and the UW-Madison Horticulture Urban and Regional Food Systems Program. DWD staff reminded stakeholders that in 2019 we could evaluate the program experiences and decide whether to shift to sponsorship by a third-party organization.

Participatory process

Development of the apprenticeship program emphasized participation and ownership by experienced organic farmers from Wisconsin. Farmers are the best source of information regarding their occupation; their participation generates strong support and buy-in. Twelve

farmers agreed to participate in the DACUM and follow-up process. All participants were diversified organic farmers, some as close as a fifteen-minute drive from Madison, and all within a three-hour drive. Most were CSA farmers, and all sold to local farmers markets. These farmers were experts in diversified organic agriculture. For the successful development of the apprenticeship program, DWD staff and other stakeholders made sure farmers' opinions were heard and reflected in the final product.

Graduate student role

We entered the apprenticeship development process during DACUM 1. We were present for all three DACUM meetings and took notes of the proceedings. We researched existing farm apprenticeship programs and compiled a list of possible farm education organizations and programs in the area. We utilized a CIAS mini-grant to ensure that farmers, during their busy season, continued to be the drivers of the development of the apprenticeship program.

Research into organic vegetable farm practices and education was required to create a rough draft of the Job Book. Since the subject-matter experts had defined the Duties and Tasks during DACUM 2, we worked with Strader on the most detailed portion of the Job Book: the Steps pertaining to each Task.

To start, we researched organic practices and contacted members of UW-Extension to create a draft of the Job Book. We relied heavily on materials from the University of California-Santa Cruz apprenticeship program, as well as our own on-farm experiences. We filled in steps below each task in the draft Job Book that we thought were appropriate and relevant to Wisconsin farmers and apprentices.

For instance, the task “Mow and incorporate crop residue into the soil” was broken down into steps: (1) Mow crops as soon as possible after harvest to reduce weeds, diseases, and pests; (2) Consult crop plan to determine what will follow the current crop; (3) Determine appropriate mower and method of incorporation based on crop characteristics and needs of the next crop; (4) Connect and use mower in the field; (5) Determine appropriate timing for incorporation based on weed pressure and the needs of the next crop; (6) Incorporate crop residue at the appropriate time using the appropriate method. Further examples can be seen in Figure E.

<u>Task</u>	<u>Step</u>	<u>NOTES</u>
A Manage Fields		
A1	Apply compost or fertilizer	
	Consult soil fertility plan	
	Apply compost or fertilizers at rates, locations, and times indicated in the plan	
A2	Perform primary tillage	
	Determine desired effect related to soil pans, incorporating crops, and soil conservation	
	Choose tillage implement based on desired effect	
	Check soil moisture to verify it is adequate for tillage	
	Connect tillage implement to appropriate tractor	
	Use tillage implement in the field	
	Verify desired effect has been achieved and make adjustments as necessary	
A3	Prepare seed beds	
	Determine type of seed/root bed needed based on crop to be planted	
	Choose implement(s) to create desired bed	
	Connect implement to appropriate tractor	
	Use implement(s) in the field	
	Verify that final seed/root bed is appropriate and make adjustments as necessary	

Figure E. outlines the steps added to each task. Steps in red relate to machinery and required farmer input.

We collaborated with Strader to help construct a representative Job Book for the program. Strader, an experienced organic farmer, helped us fine tune our steps, taking out unnecessary details and adding relevant information.

Once the steps were compiled, we collected feedback from farmers on an individual basis as suited their schedules. We created a survey and a spreadsheet for farmers to input their comments directly on their own time. Some farmers filled in the survey online, while others set up phone appointments with us to record their critiques. Our flexibility to talk on the phones allowed farmers to continue providing input during the growing season.

We met our goal of collecting at least three farmer responses for each section of the Job Book. We took feedback into consideration and made appropriate changes to the steps in the Job Book. At DACUM 3, we met with the DWD and all farmer stakeholders to ensure that the Job Book adequately reflected their standards for a Wisconsin-based organic vegetable farm manager apprenticeship program.

Future

The organic farm manager apprenticeship program will be reviewed and approved by the Bureau of Apprenticeship Standards on June 1st, 2018. One apprentice and farmer-instructor pair will be enrolled during the 2018 growing season. Extension agents and UW-Madison graduate students will provide support to the farmer instructors and the apprentice during the first year. Initially, farmer-instructors and apprentices are being paired by farmers selecting current employees who wish to further their agricultural knowledge in a formalized way. In the future, participants will be recruited online and through listservs. Applications will be reviewed, and interviews conducted to match farmer-instructors and apprentices.

Supported participants in the apprenticeship program will graduate with the skills and knowledge to enter a career in organic vegetable farm management. Apprentice and farmer evaluations will be used to improve the program. We will be responsive to feedback about

the instructional program and make in-course corrections as needed. All partners will assess learning outcomes and effectiveness of learning after first season in summative evaluations, revise the learning design by incorporating feedback from assessment and re-deploy. The program will continue to evolve with farmer and apprentice needs.

Graduate students will conduct bi-monthly phone calls to apprentices and farmers from May 2018 until April 2019 to ensure that each is satisfied with the match and the apprenticeship program. Graduate students will collect evaluations of the apprenticeship program and compile feedback to improve the following season of apprenticeship enrollment. Support staff will record the number of apprentices that graduate the program and continue a career in sustainable agriculture.

The Dairy Grazers Apprenticeship Program (DGA) received funding to support educating the educators in the apprenticeship program. We are hoping to receive funding to establish a similar teacher training capstone workshop that will focus on practical skills development for farmer educators. It would include both presentations and group discussions. This workshop would not be a basic overview of instructional methods but would instead focus on specific skill sets that farmers identify as difficult to teach or learn. The program would be developed based on participant needs and would be guided by both a facilitator from DWD and a contracted experiential educator.

The end product of this process: a formal apprenticeship program, registered with state and federal departments of labor, gives structure and support to on-farm training and related instruction. This project is being replicated across the nation. Academic and governmental partners, along with local organic farmers, in New York, Pennsylvania, and

Maine are developing department of labor recognized apprenticeship programs that include hands-on skills training and associated coursework

Chapter 2.

Analysis of the Participation Process of the Apprenticeship Program

Introduction:

Popularity for participatory approaches in agricultural development and research have increased over the past thirty years (Neef & Neubert, 2010; Wilson, 2004). Yet, there is no one definition for participation, as the term is used in many contexts and understood in various ways (Luyet et al., 2012). The World Bank (1996) defined participation as “a process through which stakeholders’ influence and share control over development initiatives and the decision and resources which affect them.” I propose that, Aref’s (2009) definition of participation as the definition for this reflection: participation is “the process of communication among men, women farmers and extension workers during which the farmers take the leading role to analyze their situation, to plan, implement and evaluate development activities.”

Just as there is no one definition of participation, there are a multitude of reasons academics and organizers incorporate stakeholders (Need & Neubert, 2010). Participation can be utilized in a functional approach that centers farmer in the process of development (Werner, 1993; Farrington, 1998). More politically, participation is seen as a tool of empowerment for the poor and marginalized (Freire, 1973; Fals-Borda & Rahman, 1991). The apprenticeship program creation process primarily centered farmers’ experiences and voice in the process of developing standards and curriculum.

The initial goal of the organic apprenticeship program was to enable a participatory and inclusive process where farmers from across Wisconsin were to shape a program that

directly reflects their knowledge and lived experiences. The first stakeholder meeting reflected a grassroots initiative with farmers from a variety of backgrounds and stakeholders from UW-Madison Extension and University, several non-profits, and the DWD. However, as the program evolved the roles and voices of the non-white farmers and non-profits representing non-white farmers declined. The resulting process of developing the apprenticeship program was not as representative, and potential priorities of non-white farmers were not included. There were no accommodations made for different languages, epistemologies, and ways of learning or teaching agriculture. Additionally, as a DWD requirement, both agricultural educators and apprentices will be required to have identification issued by the United States, which could limit participation of potential farmers who are undocumented or do not own identification.

Participatory processes are not linear but reflect the complexity and heterogeneity of the local temporal and spatial context as well as the stakeholders (Neef & Neubert 2012). The organic apprenticeship creation project evolved from an inclusive grassroots movement, generated by farmers, educators, and nonprofits to a more formalized top-down development structure with the Department of Workforce Development directing the progression of the process. The roles of the stakeholders ebbed and flowed throughout the two-year process. As we were funded and facilitated through the DWD, the project was limited in some of the decision-making capabilities. The voices of nonprofits were lost in our curriculum creation process. We were also tied to DWD expectation and timelines, which did not always match up with the reality of the farmers' seasonal schedules.

The DWD provided key services, including facilitating, funding, and hosting the apprenticeship training. Without the DWD, it would have been incredibly difficult to create

a formalized curriculum in such a short timeline. A formal apprenticeship program created through the DWD carries certification and legitimization. Additionally, the employees of the DWD were very supportive of the program, often bending the rules and increasing flexibility to meet farmer needs. Yet, there were obvious conflicts and barriers to participation. The tensions experienced between the farmers and the department stemmed from the unique history and lifestyle of the farm industry and are outlined in this chapter.

Conflicts:

A. Management roles of apprentices:

The Department of Workforce Development historically does not allow apprentices to supervise employees during their apprenticeship to keep employers from using apprenticeship programs as alternatives to hiring a supervisor. However, management of employees is imperative for a farm manager. Typically, after completing one season on a farm, the apprentice may be the most senior employee on farm. The farmers agreed that it would be a disservice to prevent apprentices from having the opportunity to lead a crew. The DWD agreed that apprentices could take on some managerial tasks, but we would need to change certain aspects of the Job Book to say “assist.” For example, “train new employees” was changed to “assist in training of new employees.” This adjustment slowed the process but did not inhibit farmer participation.

B. Schedules and timelines:

The DWD wanted to set firm timelines, constraining DACUM meetings and webinars between 9 AM to 4 PM on weekdays. However, farmers cannot predict the

weather and climatic events that will shape their unpredictable and intense schedules. Unlike other professions, farm owners are often the least flexible individuals of their businesses with the busiest schedules. The seasonal nature of farm work increased the incompatibility of farmers and government officials' schedules. It was hard to balance institutional and participatory aspects of the apprenticeship program.

This tension was exemplified by the final approval meeting which was scheduled in November. The DWD employees wanted to set a time far in advance to ensure that everyone could clear their schedules; the date for the meeting was decided three months before the final meeting date. However, Wisconsin had a warm fall in 2017 and the day after our final meeting was the first freeze of the season. More than half of the farmers made the decision the day before or morning of the final meeting to stay and tend to their fields. As all steps are approved on a consensus basis, we had to table to final approval for another meeting we set in December.

C. Role of Extension and the University:

The public-sector support system for farming in Wisconsin is very strong. DWD was not used to the role of UWEX and UW-Madison supporting farmers and increasing their ability to participate. The DWD representatives were concerned that our participation would dilute the farmers' voices in the process. However, without the support of graduate students and extension agents, the farmers' ability to participate would have greatly diminished during the summer season.

D. Role of non-profits:

The DWD requires 144 hours of coursework be completed through the technical colleges. Partnering with the technical colleges allowed for the courses to be tailored to the apprentices' needs and schedules. However, this limited our ability to include non-profits in the off-farm education. As we were unable to incorporate already existing agricultural education workshops and classes offered by non-profits serving Wisconsin farmers. Working with the DWD may not be the best route for all groups, especially those partnered closely with non-profits, that are considering instituting an apprenticeship program.

D. Collaboration with outside stakeholders

Partnering organizations from other states are also interested in creating their own state-certified apprenticeship programs. Leadership from Pennsylvania Association of Sustainable Farmers (PASA), Maine Organic Farmers and Gardeners Association (MOFGA), and Northeast Organic Farming Association of New York (NOFANY) wanted to participate in the process and replicate similar processes in their own states. However, the DWD highly discouraged participation from groups in other states. Additionally, we could not share project documents until final approval. Our ability to collaborate with out-of-state stakeholders was severely limited.

Framework of Evaluation of Participation

A main driver of the organic farmer apprenticeship program creation process was to enable organic farmers in Wisconsin to feel accountable for and shape the program. It is important to measure the impact of this project to articulate what aspects of the process were

successful or could be improved in future processes. In this emerging program, evaluation could help academics, government agencies, non-profits, and farmers learn from our program. Assessing participatory projects requires analysis of both the product and the process, utilizing incremental assessments of a variety of stages during the process.

In theoretical literature, many participatory projects are evaluated using participatory ladders. Sherry Arnstein's (1969)

ladder (Fig. F) is often used to analyze power within political and economic processes between development organization and the community. Although correctly focusing on participation and power in relationships,

this model is hierarchical and normative (Collins & Ison, 2009). The two-dimensional figure neglects the dynamic,

multidimensional motivations and interactions within community participation (Tritter & McCallum, 2006; Jones & Kardan, 2013; Plottu & Plottu 2009). The ladder implies that the goal of every participatory project is full citizen control, which may not be the underlying reason why all participants engage with the project (Tritter & McCallum, 2006).

Additionally, the model implies participation is a power struggle between citizens trying to move up the ladder and controlling organization and institutions limiting their ascent to the "top" and barring citizen's ability to claim control or power for themselves (Collins & Ison, 2006; Jones & Kardan, 2013). This visualization falls into the paradigm trap

Arnstein (1969) Ladder of citizen participation

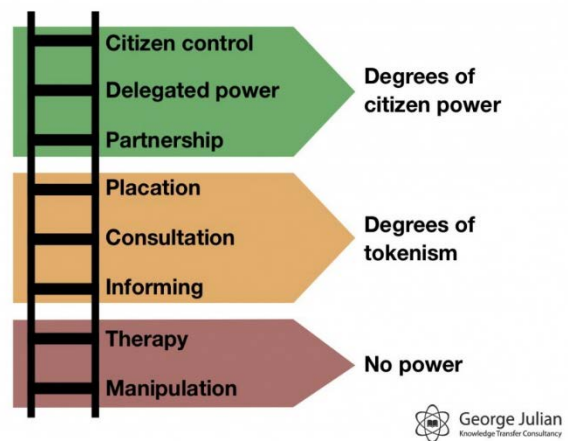


Figure F. outlines the eight rungs of participation in Sherry Arnstein's ladder of citizen participation.

of believing that meaningful participation only occurs in relation to the decisions, activities and power of state organizations or similar authorities (Collins & Ison, 2009). Additionally, the ladder representation reduces the player to two, citizens and authorities, while we had a multitude of stakeholders (farmers, academics, extension agents, non-profits, government officials, etc.) participating in the process.

A more nuanced and less normative approach to the evaluation of participation is required to create an understanding of the conditions under which participatory approaches may further support objectives. Understanding the effects of, or potential for, community participation requires a more systematic analysis of who participates, in what way, and for what reason (Jones & Kardan, 2013). For a truly participatory process, evaluations should be shaped by the participants and negotiated by the participants themselves (Plottu & Plottu 2009).

The literature cites voice, accountability, representation, and control as aspects of participation. But what does participation mean to the participants? In a truly participatory process, participants determine important steps of the process, different degrees of participation, nature of participation, the motivations for participation, who is a participant, and any other factor that the participants deem as important for assessment. The assessment tools and process should reflect the members and the context of the project. Models of participation should also incorporate the range of potential involvement desired (Collins & Ison, 2009; Jones & Kardan, 2013). For example, farmers may be eager to delegate more for projects that take place during the growing season. Approaches to participation in evaluation are based on the supposition that any human intervention in a process is not neutral and therefore conveys a set of values which helps determine the process (Green, 2002).

A wider network of power relationships within a community is important for understanding the likely impact of participation and the incentives for participation (Plottu & Plottu 2009). This process would require the participants to analyze the institutional processes through which the interests and influence of stakeholders are expressed.

Working with participants to create an evaluation framework will require farmers to take time to reflect and discuss the many steps of the process. The Organic Apprenticeship program was approved just as the beginning of the farm season started and farmers schedules will be very constrained. This brings up a limitation of participatory evaluation: the time required of participants. Due to the seasonal schedule of farmers, we would have to wait until late next fall to create an evaluation framework, to ensure participation by accommodating farmer schedules.

I would suggest for evaluating an apprenticeship development process, to allow the participating farmers to name the stages of the process, who the participating stakeholders are, and the goal of participation in each stage of the process. Using this information, the participating farmers could design a matrix that could capture the nuance and dynamic participatory process. The matrix would reflect the context of our program and the farmers values and goals in each step of the process. With this framework, farmers could determine if their goals were met during the apprenticeship program and if the process was in fact, participatory.

Discussion:

Throughout the evolution of this program, who participated and the different forms of participation (voice, control, representation, etc.) varied. However, the farmers involved

maintained control over course content and the standards and protocols of the program. For example, farmers adjusted the audience from organic farm owner to organic farm manager based from their current experience in the organic produce market. The farmers have noted that the market may be getting tighter. Thus, a career track in farm management reduces the initial economic impact for beginner farmers. Additionally, farmers are interested in long-term, qualified employees on farms. Midway through the creation process, farmers adjusted the audience and the content to suit the reality of their farming occupation. This dialogue exemplified the collective power the farmers had to shape the program.

Our finalized apprenticeship program may not be as representative or inclusive as the organizers intended the program to be. Economic inclusivity will be limited. The apprenticeship pay grade will always be above minimum wage in Wisconsin, but it may not be enough to support a family, pay off student loans, etc. The Dairy Grazing Apprenticeship (DGA) program, which also began in Wisconsin, provides equity-building opportunities in the way of giving calves to apprentices. However, when this idea was brought up in the organic apprentice program stakeholder meeting, farmers joked about giving apprentices baby tractors. This scale of equity building isn't as applicable in vegetable farming. Other options discussed include instituting savings matching programs with local banks or apprentices cultivating their own micro-enterprises on the farmer's land or creating value added products with farm produce. At the time of this article, none of the equity building programs has been instituted.

Additionally, the process of creating the program was not as diverse as was intended. At the stakeholder meeting, a few farmers from the Latinx communities attended along with nonprofits that serve historically marginalized communities and farmers. Among farmers

were consulted as well. However, the twelve core-farmers who designed the curriculum were all white. There are many potential reasons for this. Through the two-year long process, non-profits were excluded. Other barriers such as language, rigid schedules, institutional history and other less obvious reasons could have also increased exclusion.

This brings up questions like: What are the barriers? Will the curriculum that the farmers created be representative of all farmers and attractive to all apprentices? There are other organizations training new farmers in Wisconsin like Angelics Organics, along with community programs in the Hmong, African American, Latinx, and Native communities. Is our role rather to offer University and Extension resources to already established agricultural learning systems within historically marginalized communities instead of recruiting students from the communities? Is our role to link all organizations together to learn from one another?

Clearly, we have a multitude of ways to improve the program. I have directed my future PhD research to further investigate the barriers of inclusion in predominantly white institutions and the alternative models of sustainable agriculture education that may be more inclusive and holistic. Even with the changes suggested above there are systemic issues that inhibit representation of farmers from all backgrounds. Chapter 3 investigates agricultural education with the lens of Critical Race Theory to attempt understanding of the complex dynamics of race.

Chapter 3

Critical Race Theory and Agricultural Education

Introduction

The pool of potential candidates for the agricultural disciplines is not a relatively homogenous group of young people who grew up on farms. The new sustainable farmer population is growing more and more diverse in terms of age, background, and gender (New Young Farmer Coalition, 2017). Despite progress toward gender equity in sustainable agriculture, there has been relatively little progress in broadening the participation of underrepresented communities in agriculture. Racial and ethnic diversity is particularly important for the future of agriculture to reduce food insecurity and increase food sovereignty within historically marginalized communities. As agriculture continues to grow and diversify and as scholars and activists engage more deeply with questions of social justice in the food system, it is increasingly important to understand race and class-based disparities and white dominance resurgence within these movements and recognize their structural roots.

The sustainable agriculture movement is an explicit rejection of the status quo, specifically a rejection of the practices and epistemologies of conventional agriculture and its vision of the natural and social world. Despite the movement's emphasis on the "civil commons" and "social sustainability," research on "sustainable agriculture that emphasizes the economic, social, and environmental impacts of alternative food systems is often drowned out by research from the natural sciences and sometimes even social sciences that tends to see sustainability as concerning only measurable environmental outcomes"

(Pilgerame 2011). Yet, social injustice goes hand in hand with environmental injustice. Social injustices can be seen in all stages of the food system, from labor practices that exploit bodies and families of migrant workers to patterns of farm ownership that leave many people of color out of agriculture completely. If agricultural educators fail to recognize broader structural inequalities that contribute to disparities in food access, programs will face challenges in building truly inclusive, empowering, and transformative food systems.

Whiteness is one element that enables the sustainable food movement to cohere (Slocum, 2006). Despite noted potential to create a just, sustainable food system, scholars have argued that farmers markets, and the alternative agrifood movement more generally, contained whitened discourses and practices. The whiteness refers not only to the “clustering of pale bodies in farmers markets and other movement spaces, but also suggests that such spaces are shaped by a set of white cultural practices” (Guthman 2008a, 2008b, Slocum 2007). Pilgeram's (2012) argument that social sustainability is not produced in sustainable agriculture due to the hegemonic imposition of whiteness; social inclusion is not produced within the "socially disadvantaged" category for farm ownership loan allocation. This reinforces social inequalities where whiteness is once again centered.

It is of critical importance that white members of the agricultural education system recognize how they benefit personally and organizationally from the work of racism in the food system. The intention of this paper is not to reduce all aspects of the modern food system and states of food insecurity to white privilege because to do so would ignore the agency of diverse peoples of color as well as the role of class exploitation and gendered relations of power in the mix.

Critiques of organic and sustainable agriculture movements have documented the dominance of white people and white culture in alternative food activities and community groups (Alkon and McCullen, 2011; Mares and Pena 2011; Slocum 2006, 2010). Even the most well-intentioned initiatives may exist within and reinforce unjust systems. If classrooms are not equitably structured, the full potential to alter social issues cannot be realized.

America's history of colonialism impacts all peoples and systems, but disproportionately impacts communities that suffered from the racism and economic exploitation that defines modernity. The unequal histories of economic, trade, and immigration policy taught solely through a Western lens shaped by first-world notions of an inferior third world limits our understanding of agricultural knowledge. Agricultural educators need to interrogate larger histories occupied in the equation of global economics, citizenship privilege, and racial inequity particularly with respect to the gendered racialization of labor world-wide (Villenas, 2009).

This paper asserts that race- and class-based disparities that exist in the broader social systems are being replicated in agricultural apprenticeship programs. Using Critical Race Theory (CRT), this paper argues that these patterns are structural and can therefore perpetuate systemic inequalities even when individual level disparities do not appear to follow race or class lines. This paper adds to existing literature by arguing that programs fail to critically examine the role of agricultural education systems in either supporting or dismantling much broader social and political oppression. This omission perpetuates an inequitable system that is legitimized through progressive narratives about the positive

impact that agricultural education can have on issues such as good access, education, and job creation.

Colorblind racism allows people to avoid addressing why farmers of color are much less likely to participate in this system. Without attention to the oppressive structures that lead to social inequities, agricultural education may perpetuate or even reinforce the injustices that practitioners and supporters aim to address. Questions of social justice extend beyond race; an analysis of inequity would be incomplete without also considering the intertwining of social locations and the ways in which they shape lived experiences. The concept of intersectionality recognizes that individuals have overlapping identities and loyalties, including race, class, gender, spiritual beliefs, and country of origin (Delgado and Stefancic, 2012) and that these “shape structural, political, and representational aspects” of the social world. As agriculture systems consist of people with diverse identities, understanding these interactions is key to examining inequities, privilege, and the way that these might help or hinder the success of individual initiative, as well as the integrity of the system as a whole.

Race in agricultural education programs

Participation in agricultural education across the context of diversity and inclusion continues to remain stagnant (LaVerne et al., 2012). Race, ethnicity and gender data show that a majority (eighty-eight percent) of all agricultural educators are white with almost sixty-four percent reported as male (Kantrovich, 2007). In contrast, the general population has wider diversity.

Aspiring farmers of color face a multitude of hardships when starting their trade due to structural and often invisible factors. Agricultural education spaces tend to manifest and replicate these racial inequalities. Hands-on training is the best way to learn skills to become a farmer (Franz et al., 2010), yet people of color are underrepresented in agricultural apprenticeship programs throughout the United States further exacerbating these inequalities. Within the agricultural education literature, Hoerst and Whittington (2009) and Le Vergne et al. (2012) identified the need to include diverse curriculum, educators, and students in vocational and secondary agricultural education training programs. However, there has been no parallel investigation on diversity and inclusion within formal and informal agricultural apprenticeship programs.

Under the direction of Dr. Julie Dawson at the University of Wisconsin-Madison, I conducted an M.Sc. public practice project to facilitate the creation of an apprenticeship program for diversified organic farmers. I saw firsthand the barriers to inclusion when establishing an agricultural education program. The potential stakeholders we identified included an ethnically diverse group of farmers and non-profits representing marginalized farming communities, and the program organizers actively solicited participation from historically marginalized communities. However, the group of farmers that committed to the curriculum creation process was entirely white. My paper addresses the issue of inclusion within formalized apprenticeship programs with special attention to racial and cultural diversity.

Moore (1994) maintained “considering changes in demographics, industry needs, and general societal needs, supporting diversity in agricultural education should be a high

priority. The focus of diversity should be on people, programs, and the institutions/systems that are responsible for various programs in the state.” However, the presence of a diverse student body in a program is a necessary but certainly not a sufficient condition for advancing the attitudes, policies, and practices of cultural competence among agricultural education students and apprentices. Diversity does not automatically create racial justice. Wilson (1996) noted, this is not just a matter of adding cultural diversity of an existing course or two; it means “challenging the conceptual paradigms of education, the fundamental base with which students gain knowledge.”

I argue that there is a need for apprenticeship programs that are framed within a Critical Race Theory (CRT) lens (Delgado & Stefaniec 2017). We should have an awareness of possible solutions to increase underrepresented group participation in and control of agricultural education. Formalized apprenticeship programs must be created and led, at least in part, by farmers and administrators that represent the communities they serve. If only white farmers and administrators create and lead programs, it will be difficult to distinguish and dismantle dominant cultural and epistemological norms. Creating sustainable programs will require a diversity of people and ideas rather than a consensus through homogeneity.

LaBelle (1976) maintained that this underlying premise can be achieved by “advancing learning opportunities that consider multiple cultural perspectives and thereby removing the blindness imposed on education by the dominant cultural experience.” Programs must be centered around culturally appropriate learning material that allows for a multitude of ways of understanding and valuing agriculture. Establishing apprenticeship

models without participation from minoritized communities can lead to the reproduction of historical racial inequity and hegemony within agricultural education and food systems.

Non-white farmers are diverse and cannot be treated as a single entity. Each farmer will have their unique economic, practical, spiritual, political, and historic relationships to the land. Knowledge is not homogenous, degree of assimilation has varied, along with retention of traditions regarding resource management techniques and knowledge systems (Turner et al, 2000). Whent (1994) reminds agricultural educators, “to make greater strides towards acknowledging their unconscious biases toward people of diverse populations.” Deficit-oriented perspectives place the blame on individuals, perspectives often homogenize people of color rather than recognize the incredible diversity of experiences, identifications, and histories. Instead the complex ways-of-knowing, unique and varied cultural, language, and practices should be framed as strengths (Villenas, 2009).

Critical Race Theory

The urgency and intricacy of negotiating racialized difference in agricultural education is a compelling question for scholars of cultural politics. The use of Critical Race Theory (CRT) in education brings to light racial inequities, challenges the ways in which education and race are conceived, centers on experiences of people of color, and calls for a focus on social justice (Minikel-Lacocque, 2012). CRT challenges the “experience of White European Americans as the normative standard” and highlights the needs of “marginalized populations, which are often overlooked, as opposed to the agenda served by normative frameworks” (Minikel-Lacocque, 2012). This theoretical framework incorporates multiple

axes of difference and avoids succumbing to a hierarchy of oppression that fixes power relations and identities (Collins, 2009) as any location may be a site of both oppression and privilege.

Additionally, CRT pushes us away from perceiving people of color as victims. Instead, CRT requires us to recognize the resilience of people of color. CRT refutes ideologies regarding schooling that treat racial minorities as “other” and deficient. Finally, CRT mandates a focus on redressing problems with the aim of working toward social justice. Matsuda, Lawrence, Delgado and Crenshaw (1993) identified six themes that define CRT:

1. Critical race theory assumes that racism is endemic to American life.
2. CRT expresses skepticism toward dominant legal claims of neutrality, objectivity, colorblindness, and meritocracy.
3. CRT challenges ahistoricism and insists on a contextual/historical analysis of the law, and in this case, agricultural history. Critical race theorists adopt a stance that presumes that racism has contributed to all contemporary manifestations of group advantage and disadvantage.
4. CRT insists on recognition of the experiential knowledge of people of color and communities of origin in analyzing law and society.
5. CRT is interdisciplinary.
6. CRT works toward the end of eliminating racial oppression as a broader goal of ending all forms of oppression.

Ultimately, CRT presumes not to question the solution to social injustices, but the entrenched structure on which the solution was founded (Delgado & Stefancic, 2009). This theoretical paper that discuss how whiteness forms materially in sustainable agricultural education spaces. ‘Whiteness’ is a term in the literature used to refer to bodies with pale skin

color, the changing tendencies of those bodies to do certain things in a particular context and the socio-spatial processes with which those tendencies are linked (Slocum, 2006).

It is important to note that ‘whiteness’ is not equivalent to ‘negative.’ Whiteness exists within racial formations that further segregation and discrimination, but whiteness cannot be reduced to racism or to privilege (Slocum, 2007). However, identities are formed by a multitude of privileges and oppressions that shape the way the world is viewed, agriculture and what agricultural education should look like. Additionally, this paper does not aim to erase the non-whiteness that exists in agricultural education settings. The presence of people of color in white food spaces and their interest in alternative food practices does not make sustainable food movement less white. If we do not address power structure and actively name and dismantle white cultural norms, people of color who engage in sustainable agricultural education spaces may feel that they are expected to assimilate to the dominant framework and norms of the sustainable agriculture movement.

Whiteness should be understood as a part of race (Bonnett, 1996) and as a concept important to theorizing race, racism and anti-racism (Nayak, 2003). According to Ruth Frankenberg’s (1993) foundational work, whiteness “carries with it asset of ways of being in the world, a set of cultural practices often not named as “white” by white folks but looked upon instead as “American” or “normal.”

Contextualizing race in sustainable agriculture

For over a century there has been a debate over the type of system that could best meet the food and fiber needs of the global community. As the population grows and less arable land is available, the debate has intensified. Farmers of color are often left out of these discussions and are fighting to have their voices heard and their unique issues addressed. Neither organic or conventional agriculture have been able to include or represent the unique interests of farmers of color (Pennick, 2011). Critical food scholars have increasingly called for more inclusive approaches and more diverse participation in the movement (Alkon and McCullen 2011; Guthman 2008a; 2008b; Morales 2011; Slocum 2006, 2007, 2010).

According to the Sustainable Agricultural Research and Education Program (SARE) at the University of California Davis: a growing movement has emerged during the last two decades to question the role of the agricultural establishment. Today this movement for sustainable agriculture is garnering increasing support and acceptance in mainstream agriculture. One of sustainable agriculture movement's goals is social and economic equity, to make the system more inclusive without requiring that consideration also be given to diverse cultures that make up America's production system. Yet, the goal of diversity seems to be aimed at diversifying size and types of produce, rather than race and ethnicity. There is little participation by people of color in the movement and in sustainable agriculture education, especially in leadership positions. Farmers of color have an important role to play and without their participation in a meaningful way, there will be no equitable progress within sustainable agriculture education.

Farmers of color are at a constant struggle to survive. Like their white counterparts, they suffer from all the problems within a system that favors large-scale agriculture. Their situation, however, is compounded by a proven history of being discriminated against by both the private and public sectors that control markets as well as finance. Race needs to serve as a qualifier that distinguishes underserved farm groups from one another because color-blindness can be perverse as it inhibits differential lenses to help those in need (Delgado & Stefancic, 2012).

The power image of the agrarian homesteader has always coexisted uneasily with the fact of unequal access to land and the use of unpaid or low-paying farm labor from the time of European settlement through today. This overarching trend of whiteness in sustainable food system movements extends to the agricultural fields. Whites comprise the overwhelming majority of America's certified organic farmers and tend to dominate farmers markets and community supported agriculture programs (Alkon and McCullen, 2010). In the 1930s, federal programs designed to help struggling farmers funneled aid money towards larger operations, likely owned by whites, resulting in the loss of countless small southern African American farms. In the 1980s, the number of black and white farmers declined by 30% and 6.6%, respectively. In 1999 black farmers owned less than a quarter of the land they owned a decade earlier (Flanagan and Inoyue nd.). Land loss and ensuing food insecurity must be understood relative to land ownership and greater food security of white people.

U.S. Hispanics own less than 2% of land, in part due to partitioning sales, non-participation in farm programs, and systematic discrimination by the USDA. People of color

have reduced access to land, despite the necessity of labor from people of color to the success of both conventional and sustainable agriculture. “Ethnic minorities have not had equal access to land, capital, or decision making in the food and agriculture system,” yet, minoritized farmers are more likely to sell food in underserved communities of color and people of color are more likely to shop at farmers markets where they feel they have a connection to the farmer (Suarez-Balcazar, et al, 2006).

Critical Inquiry in Agricultural Education

Critical theory reorients the power structure and the sites of knowledge of the dominant research paradigm. In centered research, data is often collected “for” or “on” subjects. In critical inquiry, this positivist insistence on objectivity is rejected. Instead, criticalists aim to equalize researcher and participant relationships. This false dichotomy of researcher versus subject vanishes as all participants are considered equally knowing subjects (Freire 1968). In *Pedagogy of the Oppressed (1968)* Paulo Freire writes, “Who are better prepared than the oppressed to understand the terrible significance of an oppressive society? Who suffer the effects of oppression more than the oppressed? Who can better understand the necessity of liberation?”

Similarly, when constructing participatory projects or curriculum for agricultural education, we should be looking towards working “with” and learning from participants, especially those with lived experiences of oppression. In particular, many very experienced farmers of color may operate farms that are nearly invisible to dominant institutions because

they do not follow the same patterns of individual farm and business ownership that typifies farms managed by white farmers. It is only by recognizing that their experience and expertise is equally valid that we can construct truly inclusive and responsive programs.

We must understand that the current agricultural and food systems were built on a foundation of slavery, genocide, and dispossession of racialized groups of their cultural pride, land, and wealth. Time and again non-white farmers have been subject to laws and policies that have taken away their ability to own and manage land for food production. Critical inquiry acknowledges the context and the history of the people and the location of the inquiry. In canonical research, individuals are studied, leaving the systemic and historical forces that shape reality unexplored. Canonical researchers may claim to be value neutral, but critical theorists believe that nothing is outside ideology, especially the production of social knowledge.

Finally, critical practitioners aim to critique and actively disrupt oppressive systems and dominant paradigms while amplifying the voices of people disproportionately impacted by those systems. White people comprise the overwhelming majority of America's conventional and organic farmers and farming apprentices in visible institutions. A landscape of farmers with similar backgrounds, values and proclivities superficially resembles something of a monoculture. To achieve a healthy, thriving agricultural system stakeholders need to address this monoculture at the farm, state, and national level. I am aiming to co-transform agricultural apprenticeship and education spaces to promote inclusive and culturally relevant curriculum, pedagogy, and leadership. Agriculture and farming systems can only reach their greatest potential when social justice is met, and all voices are

heard. By listening to the often forgotten minoritized farmers, progressive academic educators can transform agriculture education, as a step on the road to transforming our larger food system.

Suggestions for future programs

Agricultural educators must make conscious efforts to examine what strategies and/or solutions have been implemented to nurture diversity inclusive environments; “it is essential to open an inquiry into sustainable food practices that do not operate in opposition to, but rather autonomously from the mainstream foods movement” (Mares & Peña, 2011).

Examples of autonomous agricultural education systems include Soul Fire Farm in New York, Grow Dat in Louisiana, and various food sovereignty programs led by indigenous peoples. Many of these organizations aim to provide culturally appropriate education on sustainable agricultural systems. By uniting with autonomous agricultural education systems, we can learn about other methods of teaching and curriculum while sharing our institutional knowledge and resources.

Members of dominant groups can support work to dismantle oppression and activists often work simultaneously on making changes at multiple scales (Wekerle, 2004).

Respectful engagement will no doubt mean moving beyond a superficial or aesthetic desire to become more diverse, toward a critically reflexive relationship based on mutual learning, not to mention a level of tolerance for the imperfect politics of solidarity (DuPuis, Harrison, & Goodman, 2011). Activists work discursively to disrupt this dominant whiteness by

critiquing its presumed universality and by creating physical and metaphorical spaces to hear communities of colors' agricultural and food stories and histories.

Can an agricultural education system in which some social groups have more power and privilege than others really be advancing social justice? There is a difference between seeking alternatives and seeking systemic change. Agricultural educators should co-learn with communities about structural oppression, modeling non-hierarchical forms of leadership and engaging in informal and formal policy advocacy. Paraphrasing Lili Watson, along with other aboriginal activists, our liberation from a economic, environmentally and socially exploitative food system is bound together, let us work together to build a system that benefits everyone.

Citations:

- Alkon, A. H. & Agyeman, J. (eds.) (2011). *Cultivating food justice: Race, class, and sustainability*. Cambridge, MA: MIT Press.
- Arnstein, S. (1969), A Ladder of Citizen Participation, *AIP Journal*, 214–216.
- Bonnett, A. (1996). ‘White Studies’: the problems and projects of a new research agenda. *Theory, Culture and Society* 13 (2), 145–155.
- Bradley, K, and Herrera, H. (2016) “Decolonizing Food Justice: Naming, Resisting, and Researching Colonizing Forces in the Movement.” *Antipode* 48 (1), 97–114.
- Collins, K. (2006) “Dare We Jump off Arnstein’s Ladder? Social Learning as a New Policy Paradigm,” 15.
- Collins, K., and Ison, R. (2009) “Jumping off Arnstein’s Ladder: Social Learning as a New Policy Paradigm for Climate Change Adaptation.” *Environmental Policy & Governance* 19 (6), 358–73.
- Collins, P.H., (2009) *It's All In the Family: Intersections of Gender, Race, and Nation*. *Hypatia* 13(3).
- Delgado, R., & Stefancic, J. (2012). *Critical Race Theory: An Introduction*, Second Edition. NYU Press.
- DuPuis, M. E., Harrison, J.L. & Goodman, D. (2011). Just food? In, Alkon, A.H., & Agyeman, J. (Eds.) *Cultivating food justice: Race, class, and sustainability* (pp.283-308). Cambridge, MA: MIT Press.
- Etmanski, C. (2010) “A Critical Race and Class Analysis of Learning in the Organic Farming Movement,” n.d., 23.
- Fals-Borda, O., and M.A. Rahman. (1991). *Action and knowledge. Breaking the monopoly with participatory action research*. London: Intermediate Technology Publications.
- Farrington, J. (1998). *Organisational role in farmer participatory research and extension: Lessons from the past decade*. Natural resources perspectives No. 27. London: Overseas Development Institute (ODI).
- Franz, N. K., Piercy, F., Donaldson, J., Westbrook, J., & Richard, R. (n.d.). *Farmer, Agent, and Specialist Perspectives on Preferences for Learning Among Today’s Farmers*, 12.
- Freire, P. (1968). *Pedagogy of the oppressed*. New York: Seabury Press.
- Freire, P. (1973). *Education for critical consciousness*. New York: Seabury Press.
- Greene J.C. (2002). *Towards Evaluation as a Public Craft and Evaluator as Stewards of the Public Good or on Listening Well*. Presentation at the 2002 Australian Evaluation Society International Conference, October/November.
- Guthman, J. (2008) *Bringing good food to others: investigating the subjects of alternative food practice*. *Cultural Geographies* 15 (4), 431-447.
- Guthman, J. (2008). “If They Only Knew”: Color Blindness and Universalism in California Alternative Food Institutions. *Professional Geographer*, 60(3), 387–397.
- Hoerst, Caryn and M. Whittington. (2009) *The Current Status of Classroom Inclusion Activities of Secondary Agriculture Teachers*. Vol. 50, 38-51.
- Jones, S., & Kardan, A. (2013). *A framework for analysing participation in development*. Oxford Policy Management.
- Kantrovich, A. (2007). *A National Study of the Supply and Demand for Teachers of Agricultural Education from 2004-2006*. American Association for Agricultural Education.

- Knobloch, N. A. (2003). Is experiential learning authentic? *Journal of Agricultural Education*, 44(4), 22-34.
- LaBelle, T.J. (1976). An anthropological framework for studying education. In J.I. Roberts & S.K. Akinsanya (Eds), *Educational patterns and cultural configurations: The anthropology of education* (pp. 67-82). New York: David McKay Company.
- Lavergne, D. (2012) *The Effect of Teacher Demographic and Personal Characteristics on Perceptions of Diversity Inclusion in Agricultural Education Programs*. Vol. 53, 84-97.
- Mares, T. M., & Peña, D. (2010). *Urban agriculture in the making of insurgent spaces in Los Angeles and Seattle*.
- Mares, T.M., &Peña, D.G. (2011). Environmental and food justice: Toward local, slow, and deep food systems. In, Alkon, A.H., & Agyeman, J.(Eds.) *Cultivating food justice: Race, class, and sustainability*, (pp. 197-220). Cambridge, MA:MIT Press.
- Matsuda, M., C. Lawrence, R. Delgado, and K. Crenshaw. (Eds). (1993). *Words that wound: Critical Race Theory, Assaultive Speech, and the First Amendment*. Boulder, Co: Westview Press.
- Minikel-Lacocque, J. (2012). Racism, College, and the Power of Words: Racial Microaggressions Reconsidered. *American Education Research Journal*, 50(3), 432-465.
- Moore, E. A. (1994). Supporting diversity: A challenge and opportunity for the profession. *The Agriculture Education*
- Martinez, S. W. (2010). *Local Food Systems; Concepts, Impacts, and Issues*. DIANE Publishing.
- Nayak, A., (2003). Last of the ‘Real Geordies’? White masculinities and the subcultural response to deindustrialization. *Environment and Planning D Society and Space* 21, 7–25. *Cultural Education Magazine*, 66(12), 4-5.
- Neef, A., & Neubert, D. (2011). Stakeholder participation in agricultural research projects: a conceptual framework for reflection and decision-making. *Agriculture and Human Values*, 28(2), 179–194. <https://doi.org/10.1007/s10460-010-9272-z>
- New Young Farmers Coalition. (2017) *Building a Future with Farmers: Results and Recommendations from the National Young Farmer Survey*.
- Norton, R. E. (n.d.). *Quality Instruction for the High Performance Workplace*., 9.
- Pilgeram R. (2011) “‘The Only Thing That Isn’t Sustainable... Is the Farmer’: Social Sustainability and the Politics of Class among Pacific Northwest Farmers Engaged in Sustainable Farming.” *Rural Sociology* 76(3), 375–93.
- Plottu, B., & Plottu, E. (n.d.). *Approaches to Participation in Evaluation: Some Conditions for Implementation*, 27.
- Slocum, R. (2006) “Anti-racist Practice and the Work of Community Food Organizing.” *Antipode*, 38(3), 327-249.
- Slocum, R. (2007) “Whiteness, Space and Alternative Food Practice.” *Geoforum, Post Communist Transformation*, 38(3), 520–33.
- Slocum R (2010) Race in the study of food. *Progress in Human Geography* 35(3), 303–32
- Suarez-Balcazar, Y., Martinez, L. I., Cox, G., & Jayraj, A. (2006). “African Americans’ views of access to healthy foods: What a farmers’ market provides.” *Journal of Extension*, 44, no. 2.
- J.Q., and A. McCallum (2006), *The Snakes and Ladders of User Involvement: Moving beyond Arnstein*, *Health Policy*, 76, 156–168.

- Turner, N. J., Ignace, M. B., & Ignace, R. (2000). Traditional Ecological Knowledge and Wisdom of Aboriginal Peoples in British Columbia. *Ecological Applications*, 10(5), 1275.
- Tyler, S., Louie, R., Moore E, and Rosenbaum, R. (2014) “Michigan Black Farm Owners’ Perceptions About Farm Ownership Credit Acquisition: A Critical Race Analysis.” *Race, Gender & Class* 21(3/4), 232–51.
- Wekerle G R (2004) Food justice movements: Policy, planning, and networks. *Journal of Planning Education and Research* 23(4), 378–386
- Werner, J. (1993). Participatory development of agricultural innovations. Procedures and methods of on-farm research. Eschborn: German Agency for Technical Cooperation (GTZ).
- Wilson, R. (1996). Educating for diversity. *About Campus*, 1(2), 4-9.
- World Bank. (1996) *The World Bank Participation Sourcebook*. World Bank, Washington D.C.