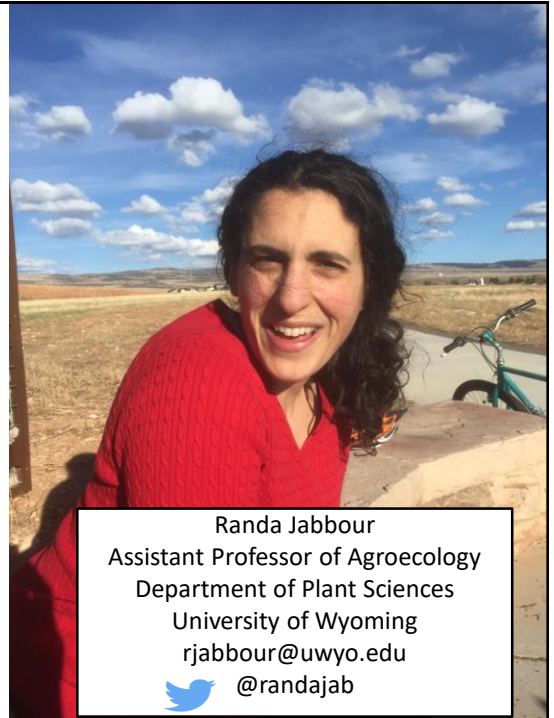


New Modules for Teaching Undergraduate Students about Organic Agriculture



Randa Jabbour
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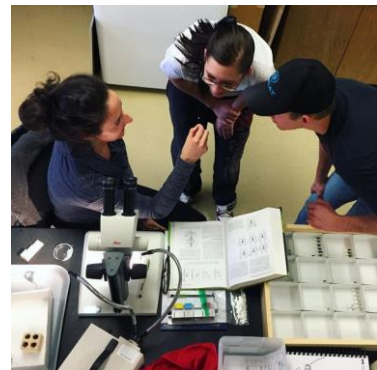


I love food!

And people!



Including students!



My Academic Background

- BS Biology: Rochester Institute of Technology

- PhD Ecology: Pennsylvania State University
- Post-doc: Washington State University
- Post-doc: University of Maine
- Faculty: University of Wyoming

*Research in
organic farming
systems
&
teaching
undergraduate
students*



EDUCATION GETTING SCHOOLED. DEC. 18 2013 5:06 PM

Teaching Isn't Rocket Science. It's Harder.

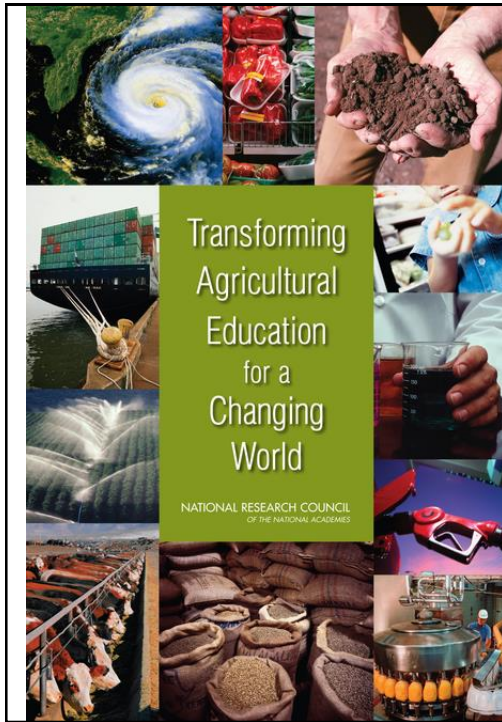
To solve engineering problems, you use your brain. Solving classroom problems uses your whole being.

By Ryan Fuller



75.7k 1.9k 311





Why undergraduate education in agriculture must change

Changes within the academy

Less students grew up on farms
Many faculty don't have experience in ag/food industry

Complex interconnected global enterprise

Global food security, biofuels, in face of changing climate

Recommendations center around integration

- Connections across academic institutions
- Partner with non-academics
- Incorporate ag examples in courses throughout university
- Promote student experiences that include transferable skills

What do students think of organic agriculture?

- Prior to covering this topic, I asked the students in my intro gen-ed agroecology class.
- 2 minutes free-form writing response.
- Coded responses for both analytical and also emotional dimensions.

What do students think about organic agriculture?		
Analytical responses		Most frequently mentioned
Risks	51 mentions	Reduced yield (14), too difficult to produce (12), too expensive (6)
Benefits	26 mentions	Environmental (7), human health (5)

Responses from total of 39 students.

Risks mentioned 2x as often as benefits

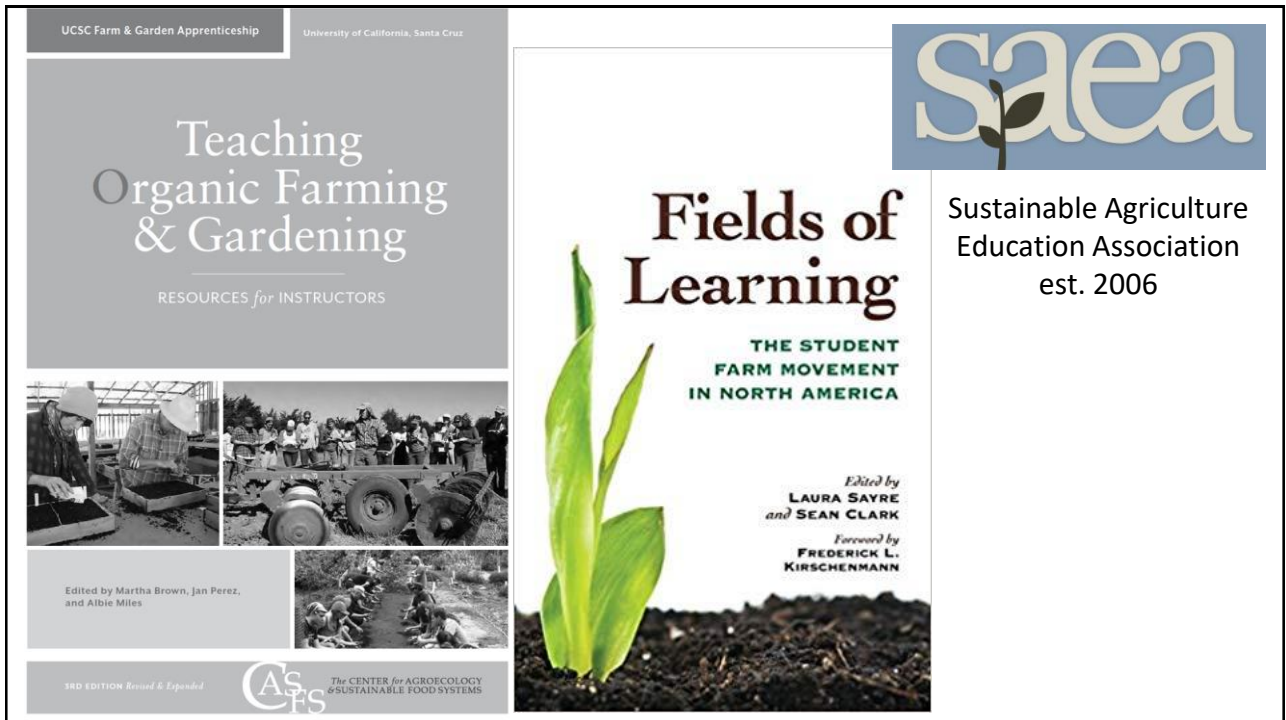
Emotional responses		Examples
Bad	11 students	“an expensive joke” “organic craze is pointless” “stupid”
Good	11 students	“very much for it” “overall a fan” “cool”

Half of the students expressed emotion
Split evenly between good & bad

Universities are increasingly offering
organic ag learning opportunities.

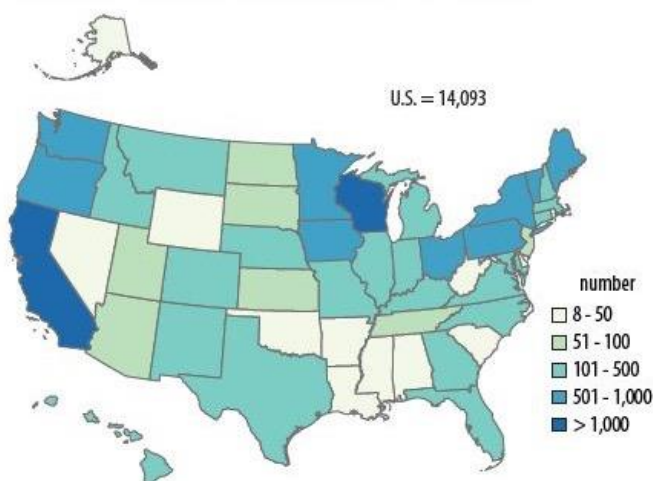
Land Grant Organic Trends	2003	2011
# of states with certified organic research acres	18	37
# of student organic farms	9	36
# of organic academic programs offered	0	8
# of states offering organic Extension resources	42	45

OFRF (2012). 2012 Land Grant Assessment. www.ofrf.org



But organic ag presence is patchy & this extends to unis.

Number of Organic Farms (certified and exempt), by State, 2014



Source: USDA NASS, 2014 Organic Survey

- Faculty teaching organic agriculture/food production/farming classes are often the “only” at their institution.
- Collaboration across universities?

USDA NIFA Organic Agriculture Research and Education Initiative (OREI)

Beginning in 2015, a new priority area was added focused on education!

“Develop new undergraduate and/or graduate curriculum for organic agriculture.”

A Modular Curriculum To Teach Critical Concepts in Organic Agriculture Across Regions

- Randa Jabbour and Eric Gallandt
- Makenzie Pellissier, Research Scientist
- 2-year project funded by USDA NIFA Organic Agriculture Research and Education Initiative #1007232.
- 100% education focused

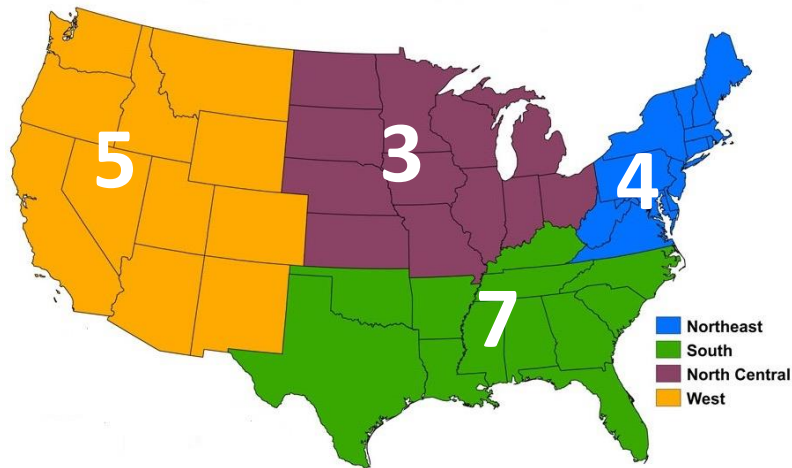
Our Overall Project Goal

- Develop multi-regional organic agriculture undergraduate curriculum at the introductory level for diverse student audiences

Project Objectives

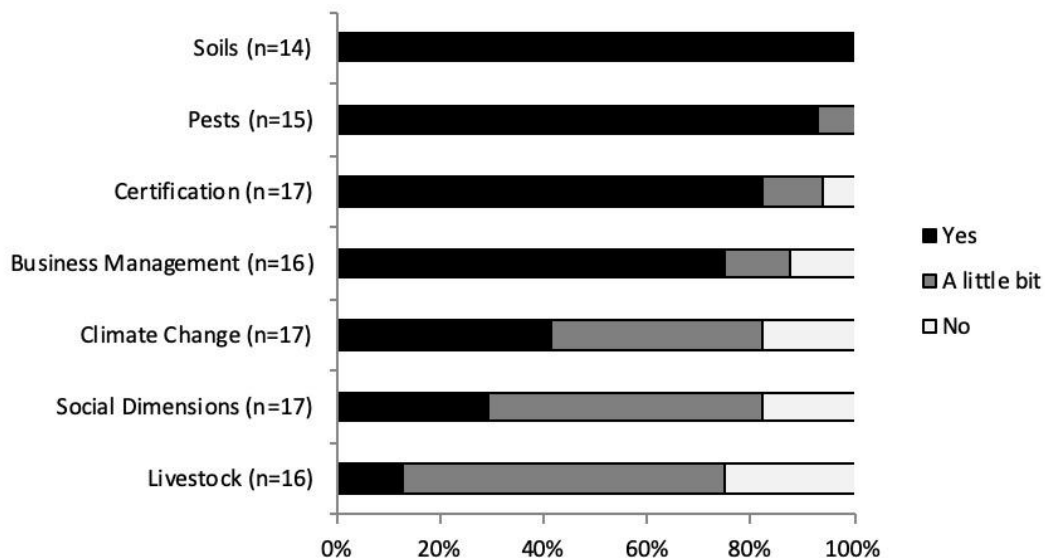
- Characterize instructors' mental models for organic agriculture education
- **Develop introductory curriculum to address critical concepts identified by instructors**
- Test curriculum in target classes across regions.

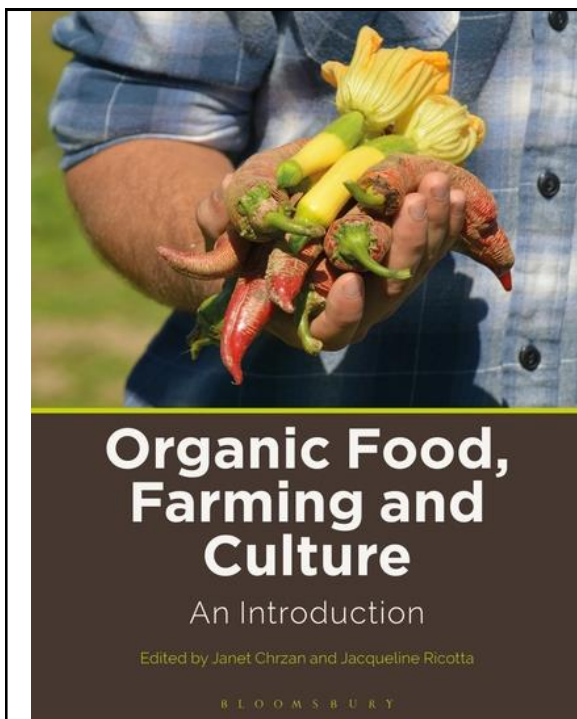
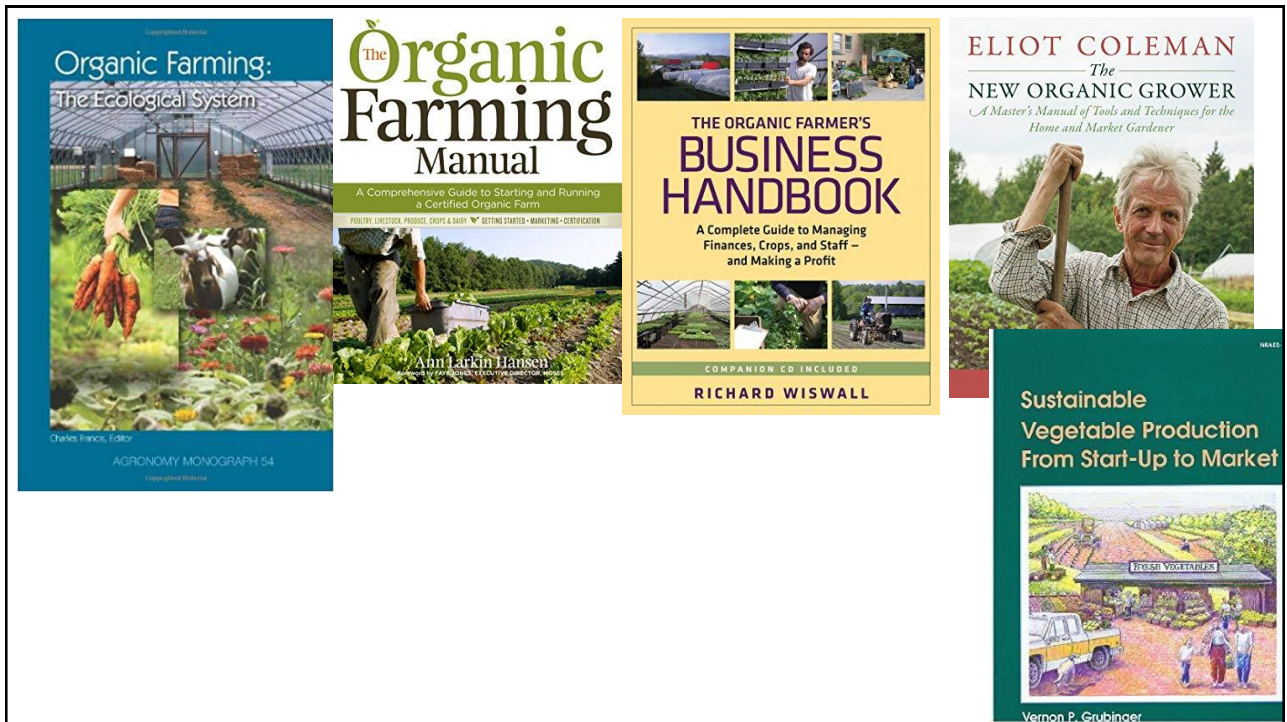
Step 1: Interview Faculty (n = 19)



Includes those at land-grant (12) and non-land-grant (5) institutions

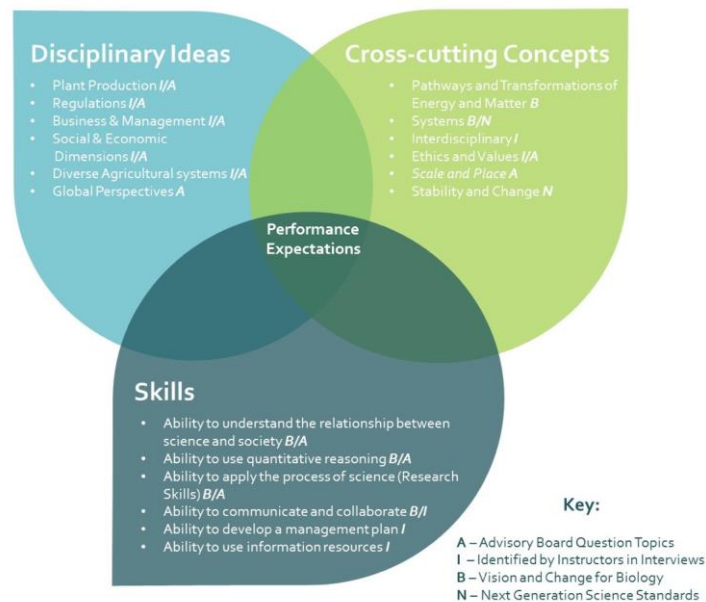
Are these topics covered in your class?





- Organic Farming: A History
- Organics in Practice
- Organic Food Values: Sustainability and Social Movements
- Organic Food Systems: Choice and Culture

Step 2: Develop framework



Step 3: Create Modules

- Livestock management
- Social dimensions
- Marketing
- Certification
- Seed
- History
- Pest management


Step 3: Create Modules

- Livestock management
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All components are adaptable for online or face-to-face teaching

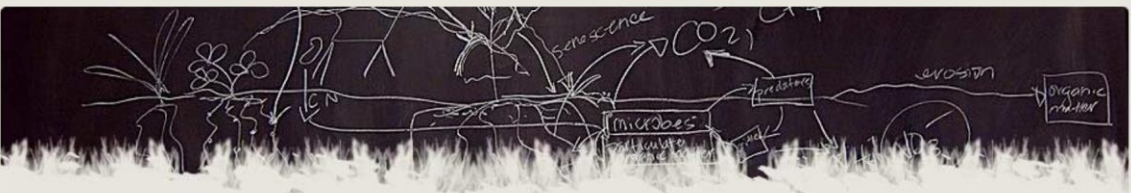
Emphasis on student-centered activities (students doing things)

Mostly open-access resources



sustainable agriculture education association
promoting the teaching and learning of sustainable agriculture

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[RESOURCES](#)
[FIELD LESSONS](#)



Featured Resource: Organic Agriculture Modules for Teaching Undergraduate Students

Thanks to funding by the USDA National Institute of Food and Agriculture (Organic Agriculture Research and Extension Initiative Accession #1007232) to Jabbour from 2015-2018.

Please email me at rjabbour@uwyo.edu for answer keys or to receive a print copy of all modules by mail!

Certification Module

Learning Objectives

Concepts










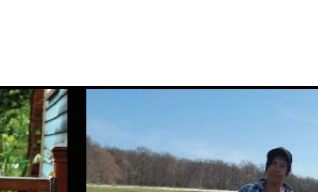
- The rules for becoming certified organic, the people and organizations involved, and the transition process.
- The underlying reasons that a producer may decide to transition which can include economic reasons and personal values.

Skills

- Navigate an online resource (*The Road to Organic*) to obtain information about the certification process and producer motives for transitioning.
- Use critical thinking to evaluate producer challenges, successes, and motives as viewed in a video where farmers talk about their certification process and use critical thinking.



<https://access.willinteractive.com/the-road/the-road-to-organic-certification>

Fertility Management	Pest Management	Certification	<p>THANK YOU TO: Jackie Ricotta Meagan Schipanski Alex Racelis Anna Prizzia Matt Ryan Sandra Wayman Israel Galindo</p> <p>AND Makenzie Pellissier</p>
			
			
Wyoming Beef	Marketing	Advice for Student Eaters	
			
Advice for Students Who Want to Farm	Colorado Dairy	<p>Organic Producer Perspectives http://bit.ly/orgproducer</p>	
			

		
NY	PA	FL
		
CO	TX	WY
		
<p>Tony Potenza, Malaika Spencer, Jordan Brown, Wendi and Keith Lankister, Juan Raygoza, Emily Prisco, and Jean and Bryce Hediger.</p>		

To certify or not?

- Lexicon of Food Video: <https://www.lexiconoffood.com/video/local-versus-organic>
- Veldstra, Michael D., Corinne E. Alexander, Maria I. Marshall. 2014. To certify or not to certify? Separating the organic production and certification decisions. *Food Policy* 49, 429-436. (*This is an open access article under a creative commons license. See 'Resources' for a link to this PDF online.*)

Instructor Notes

- This may be a possible point to talk about the role of alternative certifications (Non-GMO Project, Whole Food's "Responsibly Grown", Fair Trade, etc....). These topics may change quickly due to regulations and industry actions, thus we have opted not to link to specific resources here, but current news sources often are a good launching point.

Discussion Questions

- 1 Is organic certification worth it? To whom? Why?
- 2 Would you get certified organic? Why or why not?
- 3 How important is it that producers believe in the philosophy of organic?
- 4 As a consumer, do you think certification is less important if you can meet the farmer?

Maximizing Participation in Discussions

- **Online:**
 - Create online discussion groups (6-8 students) for entire semester.
 - Student makes initial post in online discussion before being able to see everyone else's comments.
 - Students required to respond to others with comments and questions.
- **In person:**
 - Students bring written response at beginning of class period.
 - Can begin with small-group or "talk to your neighbor" before large-group.

Marketing Module Resources

Direct Marketing Channels & Strategy for Organic Products

Organic Agriculture November 05, 2015 [Print](#)

[Like 1](#) [Tweet](#) [Save](#)

eOrganic author: Garry Stephenson, Oregon State University

Farmers approach [direct marketing](#) in a variety of ways using single or multiple channels. The goal generally is to develop a strategy to sell all the product they produce. This can be through one marketing channel or several. Farms may also add additional direct market channels as the business grows. For instance, many farmers begin with selling through a farmers' market or a roadside stand. As the business grows they can add other direct channels such as a CSA, grocery or restaurant sales. Direct sales channels for specific crops or a segment of a crop may be combined with wholesale channels. The options are nearly endless.



Farmers' market in Portland, Oregon. Photo credit: Garry Stephenson, Oregon State University

There are many approaches to farm direct marketing. Some have been around for decades others have been developed more recently. The most common types of direct marketing are:

Connect with us



Welcome

This is where you can find research-based information from America's land-grant universities enabled by [eXtension.org](#)

Select a different institution

State or Zip [LOCATE](#)

Upcoming Webinars

April 25, 2019

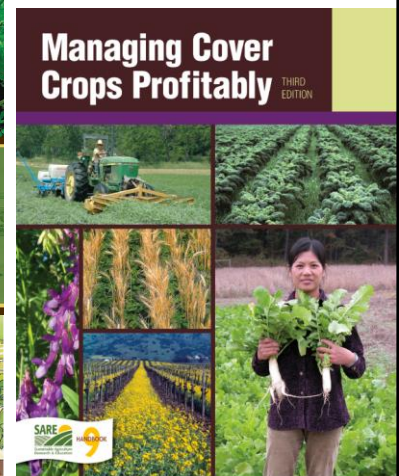
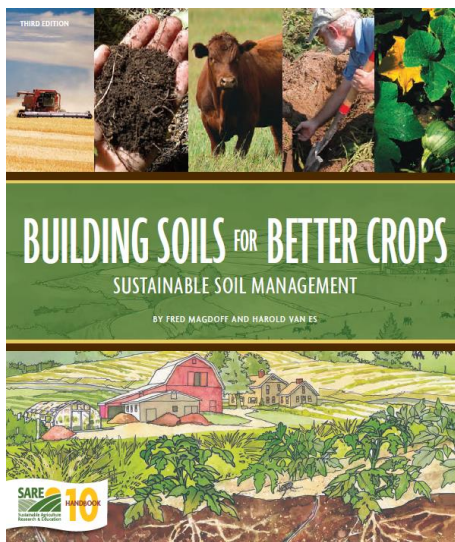
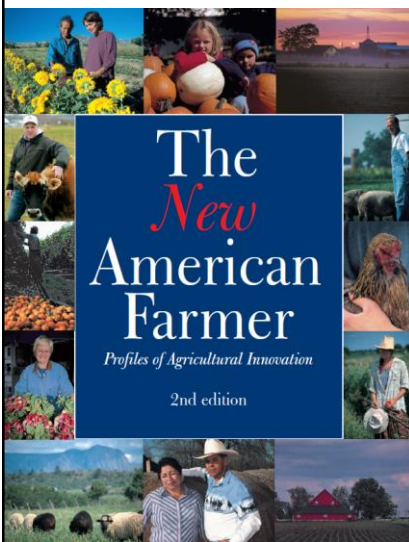
New Modules for Teaching Undergraduate Students about Organic Agriculture

May 29, 2019

Meeting Weather Challenges in the Western U.S.: Organic Practices to Mitigate and Prepare for Climate Change

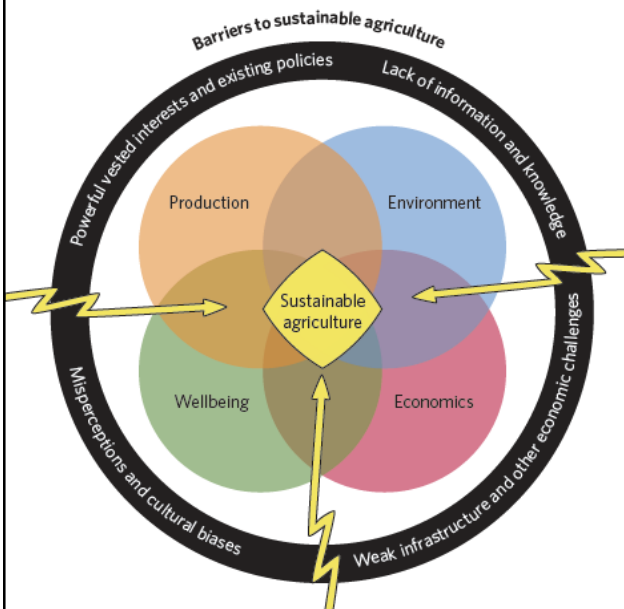
June 12, 2019

SARE Handbooks!



Time for a Dinner Party! Oral Histories & Archives

- **International Organic Ag Action Group list:**
<http://www.ifoam.bio/en/history/pioneers>
- **UC Santa Cruz Sustainable Ag Oral Histories Project:**
<https://library.ucsc.edu/reg-hist/cultiv/organizations>
- **National Ag Library Collection of Oral Histories:**
<https://www.nal.usda.gov/afsic/oral-history-interview-series>
- **National Sustainable Agricultural Oral History Archive:**
<https://www.misa.umn.edu/publications/sustainableagoralhistoryarchive>



“How well organic systems are performing in areas such as social equity (for instance, issues of gender, race, ethnicity and class) and quality of life for farm families and communities remains unclear due to limited research.”

Reganold & Wachter

Reganold & Wachter 2016 “Organic Ag in the 21st century”

Original primary literature

AGROECOLOGY AND SUSTAINABLE FOOD SYSTEMS
https://doi.org/10.1080/21683565.2017.1394416



Agriculture and Human Values (2006) 23:439–449
DOI 10.1007/s10460-006-9016-2

© Springer 2006

Does organic farming present greater opportunities for employment and community development than conventional farming? A survey-based investigation in California and Washington

Lynn Finley^a, M. Jahl Chappell^b, Paul Thiers^c, and James Roy Moore^d

Journal of Rural Studies 27 (2011) 288–296



Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud



JOURNAL OF FOOD PRODUCTS MARKETING
2017, VOL. 23, NO. 2, 221–238
<http://dx.doi.org/10.1080/10454466.2015.1048023>



Conventionalization, civic engagement, and the sustainability of organic agriculture

Jessica R. Goldberger^a

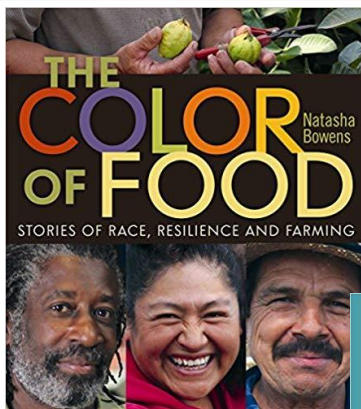
Social sustainability, farm labor, and organic agriculture: Findings from an exploratory analysis

Aimee Shreck,¹ Christy Getz,² and Gail Feenstra³

¹California Faculty Association, Sacramento, California, USA; ²Department of ESPM, University of California, Berkeley, California, USA; ³Sustainable Agriculture Research and Education Program, University of California, Davis, California, USA

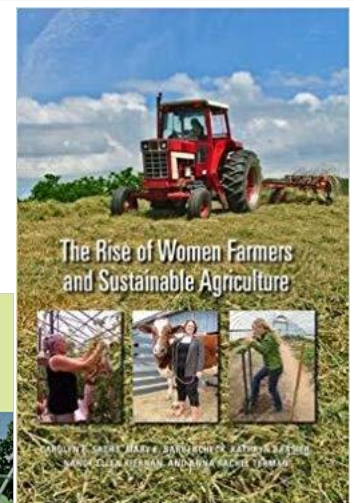
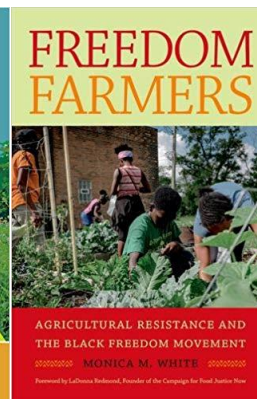
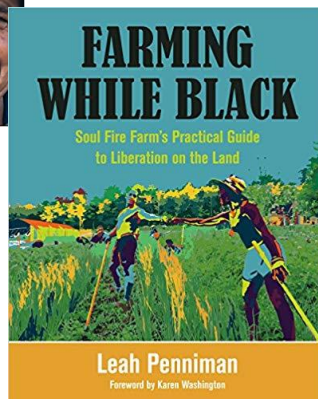
Two-Stage Determinants of the Organic Food Retailing Landscape: The Case of Manhattan, New York

Carolyn Dimitri^a, Jacqueline Geoghegan^b, and Stephanie Rogus^a



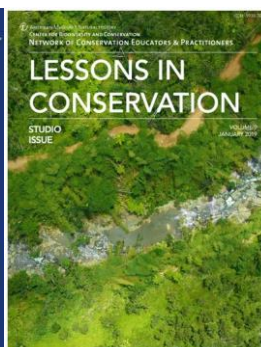
Additional Resources

And news!



Next up! Looking for colleagues

- Would you like to be part of an instructor team that provides me feedback on new modules focused on organic agriculture nutrient cycling & impacts on greenhouse gas emissions?
- Please email Randa for more details (rjabbour@uwyo.edu). Will offer honorarium in exchange for your participation in 2 short conference calls, feedback & testing on module. 2019-2020 academic year. USDA ORG funded.



North American Colleges and Teachers of Agriculture



Sustainable Agriculture Education Association

NATIONAL CENTER FOR
CASE STUDY TEACHING IN SCIENCE

Acknowledgements

- **Advisory board:** Eric Gallandt, Joe Dauer, Krista Jacobsen
- **Funding:** USDA Organic Agriculture Research & Extension Initiative (USDA OREI)
- **All faculty & farmers who participated in interviews**
- **Curriculum development:** Zoe Nelson, Makenzie Pellissier
- **Project support:** Samantha Nobes, Tim Chapman, Derek Pieper
- **Thank you Alice & eOrganic!**

Methods: Finding Faculty

- To find faculty who teach organic courses we searched
 - Sustainable ag education association (SAEA) program listing
 - Land Grant Universities
 - Hispanic Serving Institutions
 - 1890 Historically Black Colleges
- Searched **130** universities for organic courses
- Found **38** Faculty currently teaching organic courses
- Contacted **26** Faculty
- Interviewed **19** Faculty

Criteria	Range
Position	Instructor [2], Assistant Professor [6], Associate Professor [6], Professor [3], Regents Professor [1], Program Director [1]
Department	Horticulture [4], Plant Science [6], Crop & Soil Science [5], Agriculture [2], Biology [1], Natural Resources [1]
Institution Type	Land grant [12], Other 4-year [2], Liberal arts college [1], Hispanic serving [3]
Teaching appointment	15-100% (avg 54%)
Years Teaching Organic	2-15 years (avg 8.3 years)

ORGANIC LIVESTOCK MANAGEMENT

Overview

The Livestock Management module introduces students to the National Organic Program rules and regulations for organic livestock production. This includes regulations covering the topic areas of livestock origins, feed, healthcare, living conditions, and pasturing of ruminants. Additionally, students will be asked to examine these topic areas in the broader context of ecological principles, marketing, and production scale. At the end of this module, students will have the ability to navigate the Federal Register website to find information about the National Organic Program. Students will be able to calculate parameters necessary for following the pasture rule.

Learning Objectives

Concepts

- Organic production livestock regulations, including the topic areas of livestock origins, feed, healthcare, living conditions, and pasturing of ruminants.
- Similarities and differences between larger and smaller organic livestock operations (including scale, marketing, integrated crop and livestock systems).

Skills

- Navigate the Federal Register website to locate the national organic program regulations.
- Calculate the amount of pasture needed for a given number of livestock in order to comply with the pasture rule.

Each module's
contents are
mapped onto the
framework

Lesson 1: Exploring the National Organic Program
Livestock Standards

Assignment: Navigating the Federal Register for
Livestock

Lesson 2: Complying with the Pasture Rule

Lesson 3: Livestock Video Case Studies

Small organic beef ranch in Wyoming

Large organic dairy in Colorado