

# Fertile Fields for Learning: Transformational Teaching and Learning at an Undergraduate Campus Farm

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CAMPUS  
STUDENT  
ORGANIC  
FARM



# NSF Science Education for New Civic Engagements and Responsibilities:

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## **Need for 21<sup>st</sup> Century Workplace:**

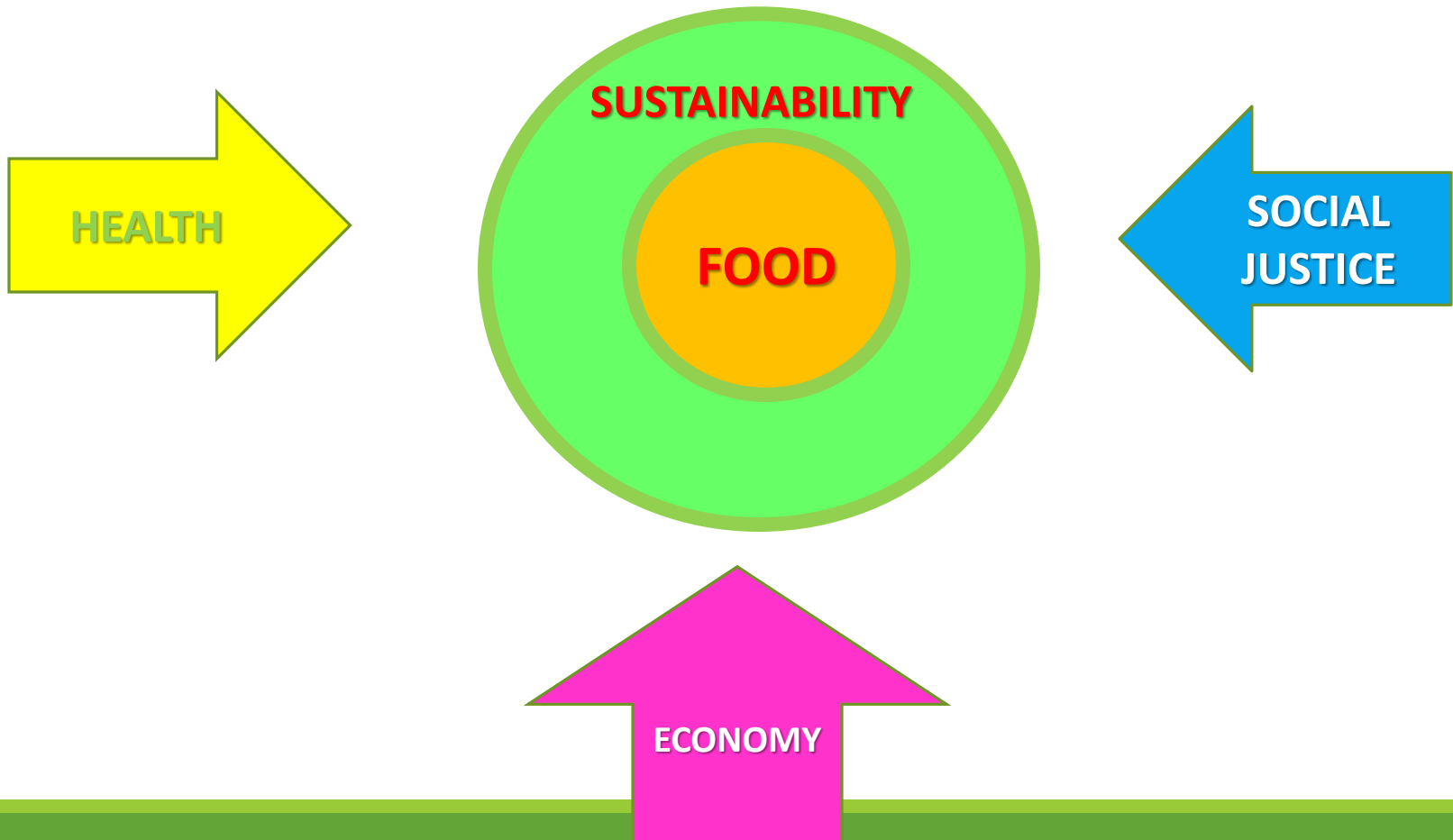
**Americans are confronted increasingly with questions in their lives that require science information and science ways of thinking for informed decision-making.**

## **NSF Science Education for New Civic Engagements and Responsibilities:**

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- **Improves science education by focusing on real world problems and, by so doing, extends the impact of this learning across the curriculum to the broader community and society.**
- **Teaching and Learning Tools for REAL WORLD PROBLEMS and INTERDISCIPLINARY, EXPERIENTIAL, TEAM-BASED TEACHING**
  - **Teaching science “through” a real world problem**
  - **Informal science learning**

**National Research Council**  
**A New Biology for the 21<sup>st</sup> Century:**  
**A New Biology Approach to the Food Challenge**



# OU CAMPUS STUDENT ORGANIC FARM

A small student-initiated garden became an academic program through a Midwest Campus Consortium grant...

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MANDATE: STEM TEACHING  
“THROUGH” FOOD

- INSTITUTE “FOOD-RELATED CLASS(ES)”
- SERVICE LEARNING
- INTER-INSTITUTIONAL COLLABORATION

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**Student Retention + STEM interest**



# **GROW TO LEARN**

## **Bio 331-332 Organic Farming**



# Bio 331-2 Organic Farming



# **ORGANIC FARMING**

## **Bio 331-332**



**Few lectures**  
**Online assignments**  
**Reflective writing**  
**Presentations: Vegetable Families**

**FINAL: Vegetable ID Exam**  
**FARM PLAN (team)**  
**Field Notebook**





# Taste the local difference...



# LEARN TO GROW

*Spring, Summer, Fall, Winter*

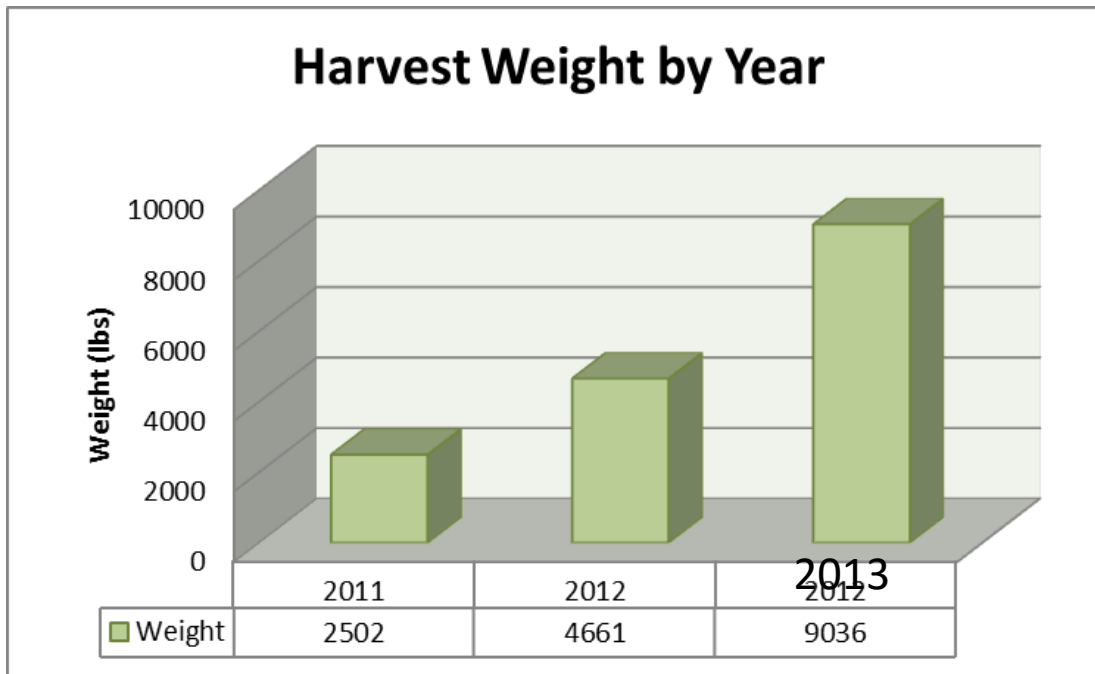
*Classes in Organic Farming Bio 331 & 332*

*Class SIZE is limited.....*



***It absolutely blew my mind when Jared showed me the results of the individual yields of the garden beds organized by fruit type, row, and harvest date. Having the tomatoes produce 1600 pounds off of just 5 50' rows is really unbelievable to me.***

***-- Bio 331 Organic Farming***





# PLANT TO HARVEST



**All in all so very glad I took this class and would highly recommend it to others.**      **-- Bio 331 Organic Farming**





## HARVEST TO SELL

*During the summer and fall we hold a weekly campus farm stand*





***...with the bio psychology of the consumers and how to position things the right way in order to sell more. When Katie brought in the flower box our already incredible bouquets started flying off the shelf just because people could now see them from a distance as they walked up to the stand.***

***The fact that we kept track of what zip code people were from while visiting our stand gave us the opportunity to see what kind of area we were able to have an impact on, and how big our community has been able to grow over the last couple of years.***

***....it was even cool having the sales data right there to compare to because it allowed us to see when we sold more of what crop, as what price we were selling it for, and then consider all of the impact. ... --Bio 491 Organic Farming***



# Bio 332: COOL SEASON CLASSES



**Bio 332 may be taken 3 times:  
Summer, Fall, Winter semesters**

***I want to join Food Corps  
where I can follow my dream  
of teaching kids about  
nutrition through gardening.***

***-- Bio 331-2 Organic Farming***

***Since my degree is working from a  
political standpoint, I'm interested  
in the political ramifications of  
zoning in urban agriculture.***

***Bio331-2 Organic Farming***



- *... I had expected to learn about soil biology, how to garden into the winter months, and how to prepare garden beds for the next year. And while I learned these things, what I hadn't counted on was learning a great deal more—about the ethics of the food system, the collaborative nature of growing food, the need for localized food production, the regulatory systems that govern our food, and the interdisciplinary nature of this work.*
- *Fall Bio 332 “Cool Season” Organic Farming Lab*



## CLASSES USING OU CAMPUS STUDENT ORGANIC FARM

### Regular Usage

BIO 331-32	Organic Farming
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BIO 361	Permaculture
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### Frequent Usage for Instruction

LBS 200	Interdisciplinary Approaches to Liberal Studies
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BIO 491	Biology of Food
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BIO 495	Scientific Inquiry and Communication
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### Field Trips, Service Learning, Resource

AN 300	Culture, Society and Technology
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AN 322	Food Quest
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BIO 111	Biology
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BIO 113	Biology
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ENV 308	Introduction to Environmental Studies
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HRD 363	Group/Team Development and Leadership
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MGT 435	Business Policies and Strategies
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WRT 160	Composition II
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# BIOLOGY OF FOOD

## *Special Topics, Bio 491*

- Food Systems from seed to plate to health and nutrition: a critical look.....
- Classroom:
  - lecture, reports, discussion, teamwork
  - farm visits
  - service learning



# BIOLOGY OF FOOD

## *Special Topics, Bio 491*

*What I learned that made the greatest impact was how much work is actually involved in growing food...Working at the farm made me appreciate how much time and effort go into growing, harvesting, and maintaining crop plants—especially the organic way.*

*My time at the Oakland University Organic Farm was more fun and educational than I could have ever imagined...things that I learned while on the farm were invaluable. By the end of my time at the farm I was disappointed that it was coming to an end.*

# Permaculture Bio 361-2

## Designs based on natural systems



- *Being able to get outside and take what we are learning and actually applying it was more beneficial than most other classes that I've taken, or things that I have learned. Usually you just learn the material and never use it, so you don't fully understand what it has to offer. Being able to be hands on and experience it first hand, especially as a class is extremely beneficial and you get more out of the learning experience.*

# OU-LTU partnership: planning for a Sustainability and Creativity Zone at OU student farm site





# OTHER CLASSES



**Human Resources: Leadership**  
*Team-Building*

**Liberal Studies Capstone**  
*Interdisciplinary Research Methodology*  
*"Feeding the World"*



LBS 200

## “Feeding the World”



*It is enjoyable, puts people outdoors and working on hands on activities, as well as an offering of educational and academically information useful to compare to the conventional idea/practice of farming.*

*I believe that the gain of firsthand knowledge at the farm is an effective method of getting students to think about food, current farming practices, health, and other related topics.”*

## SERVICE LEARNING



*Our customers purchased quality food at a reasonable price. The education they received from the CSOF team was free of charge and worth more than they might ever realize. HS402*

# SERVICE LEARNING

- *I feel as though I did fulfill a civic responsibility when completing this assignment. It was very rewarding and made me feel like I was a part of something big. It is amazing how much one person can impact the whole community around them. This project has inspired me to reach out to other people in my life and persuade them to give a helping hand as well.*
- *This field experience was really good for me. I was exposed to factors not available within a class room setting. The friends I made, the challenges we faced and the fun we had was all a great learning experience for me. I consider this experience the pinnacle in my pursuit of a Bachelor's Degree in Integrative Studies.*

# Transformational Teaching and Learning

The most overwhelmingly present component of this farm is passion. I see it each and every day in the individuals that I work with. Whether it is in their smiles, their enthusiasm, in their sharing of knowledge or in their above-and-beyond commitment, their dedication is certainly evident. They say that if you truly love what you do that you never work a day in your life. That is how these people are.





**Teamwork  
Leadership  
Community  
Pride**





# Place-based learning....

- *Looking at the course through the lens of a learning researcher, I saw something happening at the COSF that is rare in regular campus classrooms. Students were incredibly engaged in the course as a whole, taking ownership in the farm and the vegetables that they harvested, often staying past the end of class to help clean up, finish the harvest, and so forth. Students were making connections between disciplines, solving problems, and teaching each other in ways unprompted by the course instructor. Students formed a sense of community and took ownership of the course. I am delighted to say that this course has not only taught me how to be a much more efficient and productive home gardener. It has inspired my own teaching.*
- *---Dr. Dana Driscoll, Rhetoric and Communications*
- *FACULTY TEACHING AWARD 2014*

