

**Student-Centered Sustainable Farm and Sustainable Food Systems Minor  
Meeting Notes from the Visioning Meeting for Penn State Faculty/Staff  
June 4, 2014, 1-2:30pm, 214 Business Building**

**Mission Statement**

The Sustainable Food Systems Minor and Student-Centered Farm at Penn State will:

- strategically link classroom education with experiential education and research
- provide learning opportunities in sustainable agriculture and food systems that foster leadership, teamwork, critical thinking and positive change among the Penn State and surrounding communities
- be an educational facility open to students and faculty from all programs

**Attendees**

24 faculty/staff, predominantly from the College of Ag Sciences

Departments represented include: Plant Science, Animal Science, ESM, Ag & Bio Engineering, Food Science, AESE, Entomology, ENRI, RPTM and HDNRE

**Meeting Summary**

Leslie Pillen, Sustainable Student Farm Design Coordinator, presented an overview of the student farm and Sustainable Food Systems minor vision and goals. Attendees then wrote their ideas in response to four big-picture questions, and small groups synthesized this input and reported back to the full group. The notes below are the ideas written by attendees, as categorized and summarized by the small groups.

Overall, input from meeting participants reflected strong interest in having a farm site that is easily accessible for students and courses, to use for demonstrating topics and concepts taught in the classroom. In addition to use by courses, attendees envisioned offering farm internships, student research projects and experiential outreach and extension activities. For the Sustainable Food Systems minor, a range of ideas for new and existing courses were offered, with particular emphasis on the development of a new introductory course that addresses a broad range of food systems topics.

**1. What existing and new courses could be included in an interdisciplinary Sustainable Food Systems minor at Penn State?**

Group one organized the responses into three categories, including existing courses, new courses and ideas for other experiential learning opportunities.

*New Courses:*

An introductory course about food systems, the supply chain, policy, nutrition, economic development—likely team-taught

An introductory overview course so students have a solid background on how things currently work in the real world

Intro to ag, from biodynamic to conventional

A new 200- or 300-level course through Community, Environment and Development (CED) major on Agriculture, Food and Community/Community Development

An integrative capstone course for seniors to help them pull their learning together into a whole and think about applying it in the real world

The scope of courses offered will depend on the focus of the minor—whether it’s agronomic or horticultural

- Food security
- Local and regional food sheds
- Food sovereignty
- Agriculture and food policy
- An international dimension
- Biologically-based Integrated Pest Management (IPM)
- Applied farming systems and operations
- Food processing and marketing (intro or intermediate)
- Quantifying environmental impacts and ecosystem services in agricultural systems (could be in ABE, ERM, BRS, etc.)
- An interdisciplinary, field-based course on farming systems
- Advanced horticultural crop production and marketing, taught in summer
- Plant Science course on aquaponics or hydroponics

*Existing Courses:*

- Hort 432 Tree Fruit
- Hort 431 Small Fruit
- Hort 433 Vegetables
- HDNRE 532 Sustainability in Higher Education
- Hort 101 Intro
- Hort 202 Propagation
- Hort 455 Retail Business
- Hort 453 Greenhouse Production
- SOILS 404 Urban Soils
- SOILS 422 Natural Resources Conservation and Community Sustainability
- SOILS 497A Coevolution of Soil and Civilization
- ERM 497 Special Topics—Chesapeake Bay Issues and Careers (SP14)
- Any Animal Production course
- Any Ag Management course
- Fd Sc 200 Introduction to Food Science
- Fd Sc 406 Physiology of Nutrition
- Fd Sc 497 Special Topics—Science and technology (post-harvest and processing) of plant-based foods, meat-based foods and dairy-based foods
- FOR 418 Agroforestry
- AGECO 144 Principles and Practices of Organic Agriculture
- AG 150 Freshman Seminar (wants to add a service learning component)
- Plant 461 Issues in Plant Science
- AGRO 510 Ecology of Agricultural Systems
- AGRO 425 Field Crop Management

*Experiential Learning Strategies:*

- Student farm internships
- Student farm work-study
- Service learning
- Off-campus internships

## **2. What are some ways a student-centered sustainable farm might interface with your teaching, research or outreach?**

Group two organized the responses into five categories, including student research, skills development, demonstration site, internships, and experiential outreach and extension.

### *Student Research:*

Site for student projects

The Community, Environment and Development (CED) major capstone course is oriented towards student teams doing community-based, applied research and outreach projects—could be a model for more classes

Small-scale demonstration experiments or observational data collection, to support quantitative analysis in class

Integrate with water quality research

Students could observe and collect data to analyze different farming practices

Student-run soil projects, long-term focus, interdisciplinary with soils, crops, climate, etc.

### *Skills Development:*

Farm management

Human resource management

Record keeping, human resources and financial farm management skills development

Leadership experience

Multiple production experiences

Experiential learning site for soil management, pest identification and crop management practices

Help students gain experience with organic nutrient management and soil conservation

Use of precision ag on a smaller scale

Chance for students to plan production and field activities, plant crops and observe crop development

Included both food production and bioenergy production

Alternative fuels production, oilseed crops or conversion of food services' used veggie oil to biodiesel

Ecosystem services should be quantified with measurable indicators

### *Demonstration Site:*

Use the farm for labs and field trip to observe course themes in the field, to observe patterns and processes, to see the ideas discussed in class in place and active on the landscape (something close enough that students could bike/walk to it is a big plus for labs and classes)

Hands-on learning of classroom concepts

Production of multiple varieties of a crop to compare differences in nutritional profile or other health-related effects

Introduction of varieties to reduce off-farm inputs

Integrate guest instructors at the site, such as area farmers

Demonstrate Best Management Practices

Demonstrate sustainable intensification—high productivity with low environmental pact, areas of perennials for biodiversity and soil renewal

Note: using the farm in labs and classes to demonstrate concepts was written by several people

### *Internships:*

The farm as a space to provide internship and service learning opportunities

Use the farm to grow crops that interface with summer courses and internships

*Experiential Outreach and Extension:*

Integrate with the sustainable watersheds program and water quality research and outreach

The student farm could lead into the Start Farming program

Use Shaver's Creek as a model for using outreach to extend awareness to PSU and community (ex: Fall Harvest Festival)

**3. What are important features and facilities that would best support your use of the student farm?**

Group three organized the responses into 3 primary categories, including types of production that could be included on the farm, non-production activities that could be undertaken, and infrastructure that would support people's use of the farm. The overall vision is for a farm operation that is vibrant, productive and practical.

*Types of Production:*

Both agronomic and horticultural crops

Intensive vegetable production

Animals: dairy cows, goats, sheep, beef

Landscape-level approach that also considers surrounding land uses

Woody crops/intercropping

Permaculture features such as water conservation structures

High tunnels, hoop houses, rolling hothouse

Plastic mulches, drip irrigation, windbreaks, fertigation, row covers

Traditional/conventional acres

Organic versus conventional comparison

Integrative space for both non-farm, organic students and farm kids with conventional backgrounds

Certified organic acres

Demonstration areas for ag nutrient pollution control, tillage, planting, harvesting, etc.

Crop scouting

Crop and varietal testing and comparison trials

*Infrastructure:*

Water—irrigation (frost-free), produce washing

Plumbing

Restrooms and showers

Electrical

Parking

Farm manager(s)

Basic lab space, "dirty lab" that can have plant material brought in for study

Classroom facilities (four season space, with electricity)

Close to campus

Bike and shuttle access, bus stop

Animal housing

Student housing

Year-round production

Season extenders

Fencing for animal containment and biosecurity

Area for equipment demonstration and use

Equipment storage

Include equipment that may not always be found on a typical working farm  
Varying scales of equipment: small tractors, walk-behind tractors and larger equipment  
Chemical containment, storage, washdown  
Food processing facility for rental (is profitable in other places)

*Non Production Activities:*

Farmers market  
Study marketing, consider on-campus (PSU food services) versus off-campus (farmers' markets) sales  
Structured, paid internships  
Cross-PSU collaborative structure  
Thoughtful, participatory governance structure (students, faculty, staff and community members) to increase participation and study of process  
Avenues for faculty across the university to easily dialogue and create cross-course collaborations  
Safety and safety training  
Offer trainings to more than just students, such as PASA or PA WAgN

**4. What resources currently exist within or beyond Penn State that could help support the development and maintenance of the farm and minor?**

Group four categorized the responses into five primary areas, including people, facilities/equipment, programs/partners, funding and strategy.

*People:*

Leslie Pillen (or someone in her role) as a staff coordinator with both academic and production background  
Extension staff and faculty  
Expertise at Rock Springs  
Faculty  
Grad students  
Local farmers  
Farm Operations and Services  
Animal Science department  
Work study students on the farm

*Facilities/Equipment:*

Equipment for alternative fuels production  
Production equipment  
Machinery  
Pilot Plants in Food Science—lab courses in food processing methods  
Teaching Labs in Food Science—chemical and micro analysis of foods  
Rock Springs Research farms  
Cellar market—space for sales  
Plant Science greenhouses  
Aquaponics system in the Plant Science greenhouse

*Programs/Partners:*

Strong agricultural safety training programs  
Environment and Natural Resources Institute (ENRI)

Shaver's Creek Environmental Center (College of HHD, RPTM dept)—model for intern programs, development, interpretive courses, Human and Environment courses  
Industry and associations off-campus

**Funding:**

The program will need significant resources for both initial capitalization and maintenance  
Huge opportunity for alumni and foundation development—well-resourced and purposeful  
Retail sales—dining services, Cellar Market/farmers' market  
Summer short courses could raise money  
Associates degree in farm management could raise money

**Strategy:**

A strategy to deal with Penn State red tape

Group one also briefly discussed existing resources. They said it's important to find creative ways to leverage existing facilities, such as the greenhouses for starts, the Food Science pilot production plants for food processing and shops for design, build and repair of equipment. They also discussed existing seminar series such as the Sustainable Ag Working Group (SAWG) series as a place to tie into.

Notes prepared by Leslie Pillen, Sustainable Student Farm Design Coordinator, 6.10.14

