

Duluth Campus

Center for Water and the Environment
Natural Resources Research Institute

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April 27, 2012

Institute on the Environment:

RE: final project report for IonE MS-0006-11 “*Sustainable Agriculture Project*”

The goals of this project, as part of the newly formed Sustainable Agriculture Program at UMD < <http://www.d.umn.edu/cscd/sap/main/index.php>>, were to develop a set of courses that, in conjunction with course already developed (i.e. Urban Food System, Ethnobotany, Anthropology Senior Seminar, GIS in Sustainable Communities, etc.) would form the base upon which a Sustainable Agriculture certificate program or minor could be created.

Three new courses were developed and are being offered during May and summer terms 2012. The courses are fully integrated with a student led organic farming initiative that currently includes vegetable and tree fruit production at the newly resurrected UMD Field Experiment station. These foundational courses will provide students with understanding of the social, historical, economic and geographic context that led to the development of our current food system. They will come to understand the multi-dimensional nature of this food system, explore the possible future for regionally adapted food systems and the opportunities and obstacles to change. Each course has hands-on and project based components that directly involve students in the formulation and implementation of business and farming models for sustainable and organic farming with clear links to the community and regional food system. Student learn not only the skills of farming but the ecological concepts that support sustainable farming and the social systems that are integral to vital, local food systems.

ES 3100: (Randel Hanson, instructor) **Sustainable Food Systems** - Historical and contemporary food systems are examined within a sustainability framework. Students will increase their understanding of food within social, political, economic and environmental contexts. By looking at sustainable production, consumption and processing issues, students will have opportunities to learn tools for formulating future action and community processes based on resilient and adaptive thought.

ES 2095: (Cindy Hale, instructor) **Sustainable Agriculture I - Field Experience in Planning, Planting & Maintenance for Small-Scale Farms** - Students will gain hands-on experience and explore the academic issues related to the early season dimensions of small scale sustainable agriculture. Course activities will involve students directly in the planning and planting of market gardens and orchards including topics such site selection, assessment and layout; establishing plants using transplants and direct seeding, companion planting, nutrient management, irrigation methods, cover cropping, etc. Emphasis placed on field dimensions with student lead group projects as the central learning focus. Students will work in groups, in all weather conditions and actively engage in field activities related to seasonal management of small scale market gardening/farming.

ES 2095: (Cindy Hale, instructor) **Sustainable Agriculture II - Field Experience in Maintenance, Pest Management, Harvest and Marketing for Small-Scale Farms** - Students will gain hands-on experience and explore the academic issues related to the mid-late season dimensions of small scale sustainable agriculture. Course activities will involve students directly in the management of market gardens and orchards including topics such crop and pest monitoring, tool use and maintenance, nutrient management, irrigation methods, organic and integrated weed and pest control, and direct and wholesale marketing of produce. Emphasis placed on field dimensions with student lead group projects as the central learning focus. Students will work in groups, in all weather conditions and actively engage in field activities related to seasonal management of small scale market gardening/farming.

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The IonE funding directly supported development of these courses by allowing Dr. Hale to attend relevant workshops (“*Water and Agriculture in the 21st Century*” – May 6, 2012, University of Minnesota, CFANS; “*Midwest IPM training for grape & apple growers and educators*” – University of Wisconsin Madison, Center for Integrated Agricultural Systems). Three UMD centered meeting we held to inform development of the courses including Deb Shubat, Biology; Randel Hanson and Pat Farrell, Geography; Stacey Stark, Geography-GIS lab coordinator; David Syring, Anthropology; Catherine Winter, Journalism; Mike Mageau, director Center for Sustainable Community Development; Mitra Emad, Sociology. Individual meeting or consultations were made during the project with David Abaz, MISA Endowed Chair in agricultural systems; Nick Jordan, Agronomy Plant Genetics & Sustainable Agriculture Undergraduate; and Kris Johnson, IonE Sustainability Research Assoc. with the Boreal Forest & Community Resilience Project.

Additional outcomes related to our curricular development effort include:

- 1) As a result of this effort, our dean has asked us to develop a 12 credit certificate program in Sustainable Agriculture. The courses we have developed will form a part of that planned certificate program.
- 2) We developed a series of well attended public workshops centered around the UMD Seedling Trial Orchard including restorative and maintenance pruning, bench and field grafting, and a 6 part series on orchard and IPM management.
- 3) The student lead vegetable farm was increased to 3+ acres as a result of UMD dining Services increased project support through purchasing of produce and providing student workers for the summer.
- 4) Expansion of the Edible Landscapes Initiative with small to large plantings of themed gardens by a wide range of faculty/staff and student groups. In its 3rd year, the program has more than doubled the available planting space on campus as well as visibility and links to courses.
- 5) New collaboration with
 - a. the Xerces Society to host a full-day short course on *Native Pollinator Plantings for Educators and Conservation professionals*, June 13th, 2012. The SAP site will also be field trialing three experimental treatments for site preparation of native pollinator plantings
 - b. “Good Farms” incubator effort to provide land and mentorship to new farmers on land adjacent to the UMD farm
 - c. Duluth Community Garden Program and Duluth Public Schools to help develop school gardens and orchards paired with sustainable agricultural practices curriculum.
 - d. Development of collaborations that led to submission of a USDA Specialty Crop Block grant proposal to develop replicated trials of heritage and disease resistant apple varieties in zone 2-3, a 3-day beginning apple school, grower and public workshops.

A very productive and successful start that was supported by IonE. THANKS!

Sincerely,



Cindy Hale, Research Associate, University of Minnesota Duluth

Sustainable Agriculture Program - <http://www.d.umn.edu/cscd/sap/main/index.php>

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