

## **Track Six**

# **Program and Professional Development**

# Small Farm Teaching Activities

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## Objectives

- Discuss Small Farm Course
- What is Cooperative Learning
- What Teaching Activities are used
- Developing Activities for programs

## Maryland's Situation

- Population 5,296,486
  - 19<sup>th</sup> most populous state
  - Ranked 6<sup>th</sup> for population density
    - 529.1 people per square mile
- Median Income
  - \$52,868 a year in MD
  - \$41,994 a year in US
- Maryland has a growing population with disposable income

*2000 Census Data*

## Maryland Agriculture's Situation

- Land in Farms
  - 48% of farms are less than 50 acres
- Occupation
  - 62% report farming is not a primary occupation
  - 68% report working off the farm 200 days or more
- Maryland has Part-time farmers on small acreages

*2002 Census of Agriculture*

## Goals of the Small Farm Program

- Introduce the agriculture industry and enterprises available to small farmers
- Environmental stewardship, crop and livestock production strategies
- Tools to develop a small farm enterprise
- Resources available to small farmers

## Types of Programs

- Small Farm Short-Course
  - Held 3 small farm courses (6 week)
- Workshops
  - Tourism, Equine, Direct Marketing, Greenhouse, QuickBooks, Small Business Development, Farm

Markets, Marketing/Business Planning

- One on one visits
- Farm and office

## Highlights

- Small Farm Short Course
- Workbook
- Survey of interests
- Teaching Activities and "Group Work"
- Panel of successful small farmers
- Decision making, production/growing techniques, Marketing, Regulations, and Advice for a small farmer that is starting a business?

## Results

- 95% of participants rated the course "Excellent"
- 98% of participants rated content, organization, creating interest, involvement of participants, pace of delivery, and workbook materials as good or excellent

## Outcomes

- Participants were asked which farm practices would be incorporated as a result of this course:

- 90% Soil test
- 88% Renovate your pasture
- 88% Try a new crop
- 90% Incorporate IPM on farm
- 90% Write a business marketing plan
- 80% Try a new animal enterprise

## Participation

- Small Farm Short-Course - 44 participants
- Workshops - 220 participants
- One on one visits - 72 participants
- Total - 336 participants

## Small Farm Enterprises

- Equine Pasture management,

- renovation, equine opportunities, marketing
- C Direct Marketing/Farm Markets Display design, product mix, marketing, customer service
- C Greenhouse Marketing, business management

### **Why Teaching Activities?**

#### Cooperative Learning

"Researchers report that, regardless of the subject matter, students working in small groups tend to learn more of what is taught and retain it longer than when the same content is presented in other instructional formats." (Barbara Gross Davis, Tools for Teaching)

### **Teaching Activities**

- C Introduction to Agriculture
  - C Small Farm Survey
  - C Farm Information Sheet
- C Soils and Pest Management
  - C Soil Testing
  - C Pesticide Label
- C Livestock Management

- C 4 Steps to Rotational Grazing
- C Hay Quality
- C Business and Marketing
  - C Enterprise Brainstorming Activity
  - C Market it

### **Developing Activities**

- C Be Creative
- C Assess the Audience – Some participate more than others
- C Keep within the Goals of the Class

### **Small Farm Teaching Activities**

- C Sample activities were shown as examples
- C Manual has been developed including
  - 10 Activities
  - 23 pages
- Will be available Jan 1, 2006

# Tips for Early Career Success in Programming for Small Farmers and Ranchers

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New personnel are often overwhelmed with the breadth, depth, and diversity of providing educational assistance to small farmers and ranchers. Time management, community needs assessments, organizational skills, public relations, and the development of a program emphasis are all key components for educators developing their local programs early in their career. The purpose of this abstract is to share tips for early career success in programming for small farmers and ranchers.

## Getting to Know the People

One of the most crucial steps in starting a new community outreach program is getting to know the needs of the clientele. On-site visits, surveys, focus groups and agricultural committees all can play a major role in determining the educational needs of a community. Educators should set a goal of meeting as many farmers and ranchers as possible on site during their initial years of employment. These meetings allow the educator to ask producers about their educational needs and their perception of the assistance that you, as the Educator, can offer them. In addition, these on-site visits allow an educator to watch, listen, and feel for the producers' unspoken needs.

A great way to ascertain programming needs of a clientele group is to develop an agricultural program committee. This committee should represent the present and potential areas of program emphasis. Include key leaders, producers and public officials. To keep the energy on the committee fresh, it has been suggested that members serve no more than two three-year terms with one-quarter to one-third of the membership changing

annually<sup>1</sup>. The educator should strive to include a balance of age, income, gender, race and geographic distribution on their committee. These groups are invaluable in providing input for educational programming and research.

The educator can also use mail surveys to help ascertain programming needs. Surveys should be constructed so they are easy to respond to. After all, what busy farmer or rancher wants to complete a 15 page survey in the middle of planting season? Educators should not attempt to get all the answers from one survey. It is also helpful to pilot test the survey with a group of producers to make sure they can understand the questions and make sure all possible answers have been accounted for.

Educators can also use focus groups to ascertain the educational needs of their farmers and ranchers. Methods such as "Appreciative Inquiry" bring community members together to assess present and past programming, identify major trends, and identify common ground and goals for the future. Appreciative inquiry sessions are invaluable to educators who are completely new to their community as it allows them to understand the underlying values and beliefs of a community. Educators wishing to learn more about how appreciative inquiry is being used by educators in Ohio can contact Chester Bowling at [bowling43@osu.edu](mailto:bowling43@osu.edu) or 614-292-8436 or review the website at: <http://appreciativeinquiry.cwru.edu/>

## Organization & Time Management

*"It is a great art to know what to leave undone, to know how to weed out the less important things, and to spend one's energies in doing the things which will count."*<sup>2</sup>

One of the struggles for any educator is how to balance the educational and research demands of their community with their personal life. It is vital that new educators put in place strategies to help manage their time early in their career. Administrator after administrator can cite examples of educators that have ruined their personal, and sometimes professional, lives due to poor time management.

Prioritizing and organizing are two of the most critical aspects of time management. It has been quoted that the average educator wastes six weeks per year searching for lost information in messy desks or files. A loaded desk is not always the sign of a very busy and important person. It may just be the sign of disorganization. Educators should strive to develop a file system that highlights different programming areas. Some educators have adopted colors for files in each area. For instance, all committee work and programming information for water quality programs would be filed in blue file folders, whereas information on forestry issues may be in a green file.

Additional ways for Educators to keep organized is by keeping clutter at a minimum by utilizing a variety of storage items, storing as much information as possible on a computer to limit paper clutter, and opening mail near the recycling box.<sup>3</sup> Establish a to-do list of projects that are important and then treat them with priority. Another good strategy is to complete more difficult tasks in off-hour periods or at times when interruptions in the office can be minimized. Some educators will flex their schedule to work late, early or on weekends to complete these tasks.

A question that all educators should ask is, "Does having a career mean giving up your family life?" Some educators have found success in balancing family and work by implementing a variety of strategies. It is helpful for educators to use one calendar making sure to schedule annual leave and important family and school events in first. These dates then become non-negotiable when committees are scheduling meetings and programs. Some educators place JFMF meetings (Just for My Family) into their schedules. Educators can also piggyback meetings into one night (one meeting from 6:00-7:30 pm and one from 8:00-9:30 pm) instead of being at the office two consecutive nights.

Communication by the educator is key. Communication with the organization's receptionist is vital for when clientele call or stop by the office. The receptionist needs to know where you are and the next time you will be available to meet with clientele. Nothing is worse than a receptionist saying, "I don't know where she/he is or when she/he will be back." Even though you could be at an important meeting or working on an on-farm research project, the clientele will leave thinking that you are out golfing! Communication with your spouse and children is also key. It is helpful to the entire family to establish parameters. For instance, the author's family goal is to eat dinner as a family each night (whether that is at the office, home or banquet). We also have established that work stays at work and home phones are not for business.

Ohio State University Extension offers additional strategies with regards to time management, creating balance, dealing with interruptions, organizing, setting priorities and managing procrastination. These strategies can be found at: <http://hr.ag.ohio-state.edu/TimeManqWebsite/index.htm>

## Media Relations

One excellent way for educators to get a good start to their career is by developing a positive relationship with the local media. Publicity for educational events through the news media can help increase attendance and visibility of the local office. Educators should meet with local editors to make the connection that you, as an Educator, are here to help them. Some educators offer to write a weekly column and send in pictures from agricultural events as a service to the paper.

## Summary

Getting to know the community, developing time management and organization skills and developing a media relations plan can help new Educators to be more successful early in their career.

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- <sup>2</sup> The Extension Workers Code (1922). Kansas State University. Bulletin #33. On-line. Retrieved October, 2005.  
[www.oznet.ksu.edu/historicpublications/Pubs/exbul33.pdf](http://www.oznet.ksu.edu/historicpublications/Pubs/exbul33.pdf)
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<http://hr.ag.ohio-state.edu/TimeMangWebsite/index.htm>

# Growing Places: Developing Informed Decision-Making for Beginning Farmers

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The number of women aspiring to become farmers is increasing annually and demographic indicators suggest that this trend is likely to continue. Frequently these new farmers have some unique needs that have not been addressed in traditional Extension business management programs. In working with this audience we have been challenged to reconsider some of our fundamental beliefs about farming and what constitutes "success."

The Women's Agricultural Network (WAgN) opened in 1995 as a beginning farmer program with two primary objectives: i) to help women get connected to USDA programs and, ii) to develop strong agricultural business management skills. WAgN has since delivered outreach, education and technical assistance to over 1600 individuals and helped over 400 attain their business goals. One of the lessons learned is that management education is most successful when considered within the context of the lifestage needs of the client. For that reason we have developed a pre-business readiness class, *Growing Places*, which helps individuals address issues such as work-family-life balance, financial needs and expectations, and community support as well as issues of scope, scale, and production within the business.

This presentation addresses the processes that many beginning farmers engage in as they evaluate the feasibility of their business idea and the importance of informed decision-making on future happiness. We will also discuss why we believe pre-business readiness classes, like *Growing Places*, are important not only for sharpening the decision-making

skills of prospective farmers but also in raising the agricultural IQ of rural communities and integrating under-served audiences into the many service and educational opportunities available.

*Growing Places* addresses the earliest stages of business development (figure 1). During the pre-business planning phase it is imperative that the individual articulate clearly what they hope to achieve from the business and what resources they have to invest as well as understand their comfort with respect to risk.

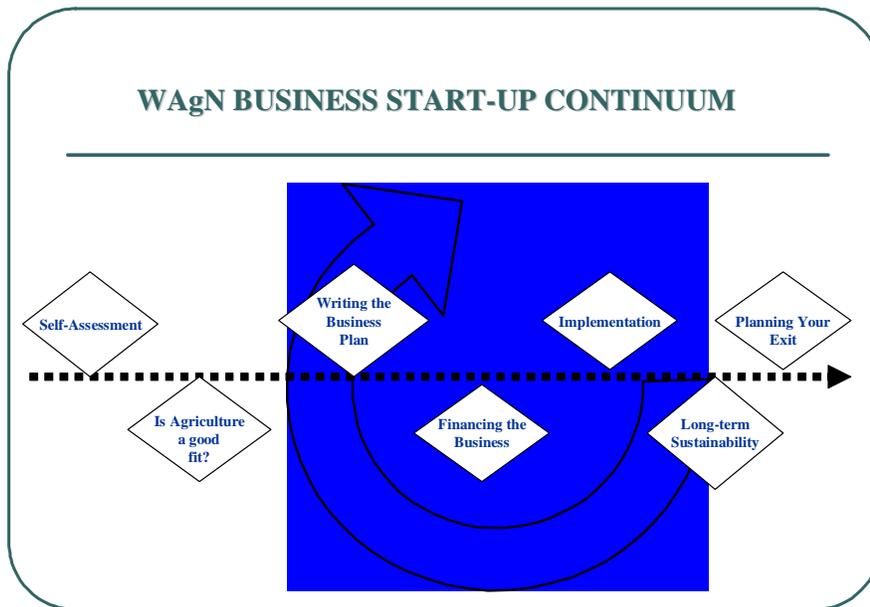
*Growing Places* is an eighteen hour pre-business planning class that has proven useful to individuals exploring agriculture as a business opportunity. Twelve to eighteen months after the class ends participants are asked to complete a follow-up survey. This helps us to track individual progress but also to see what difference the class made.

Results of follow-up surveys with class graduates indicate that approximately 44% of participants do, in fact, go on to start businesses. Over half of the participants have gone to other workshops or classes to help them achieve their goals. About 20% of the participants report that the class helped them decide not to continue with their plans for an agricultural business. Given the many challenges faced by farmers we applaud both the decision to move forward and the decision not to with equal enthusiasm.

The core of *Growing Places* is a values-based goal statement that participants are encouraged to write in the first week of class. That goal statement serves as a fundamental tool in the remaining classes. Classes that follow include: decision-

making, resource evaluation, financial management, and marketing. The class closes with action planning which helps participants focus their energy on moving toward their goal. For some participants the class provides all the information necessary for them to go on to complete their business plan. For others, the support and structure of additional classwork is needed. For those participants *Growing Places* is followed by a class in writing the business plan. This class is a collaborative effort of UVM Extension and SBDC with additional support from a variety of ag-related organizations.

Of the 300+ individuals that have registered for *Growing Places* the completion rate is extremely high. In ten years, only 5 individuals have not completed the class. This speaks well for the content of the class which students consistently rate very high and the manageable length of the class. In the business plan writing class which lasts for 14 weeks and consists of both *Growing Places* graduates and others that have not participated in *Growing Places*, the rate of completion is much higher among those that have attended *Growing Places*. We maintain that one reason for this is that *Growing Places* acts as a filter helping individuals to assess for themselves whether self-employment is a viable option.



# Developing Community Supported Agriculture Production & Marketing Tools for Extension-based Education to Limited Resource Small Farmers

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## Justification and Description

Community Supported Agriculture (CSA) is a production and marketing system that small farmers can adopt to reduce economic risk. Through CSA, customers pre-purchase a share of the harvest before the growing season. This pre-payment method helps with start-up costs occurring early in the season; reducing financial burdens associated with operating loans or credit cards. Although CSA is a profitable alternative, adoption is slow. Due to the complex range of production, planning and marketing skills involved in developing a successful CSA operation, it is difficult for educators to teach CSA concepts to limited resource small farmers seeking profitable alternatives. There is a justified need to produce an educational toolbox to teach the fundamentals of CSA to limited resource small farmers.

## Objectives

Objective 1: Develop research based CSA production and marketing tools that teach how to plan, produce and market through CSA.

Objective 2: Utilize research and demonstration data to create on-farm, research-based education tools that can be adapted by educators who are teaching CSA to limited resource small farmers.

Objective 3: Demonstrate and evaluate developed research based educational tools for use in educational trainings on CSA.

## Approaches

To address the identified educational need to develop CSA production and marketing tools that teach how to plan, produce and

market through CSA, we have conducted a three year on-farm research and demonstration experimental trial in collaboration with NC Department of Agriculture's Research Station Division and NC Cooperative Extension-Ashe County.

The following educational tools (*Items a to f., listed below*) included on an interactive, multi-media resource CD, have been developed and can be readily adapted or utilized by extension and research personnel faced with the challenge of teaching CSA to limited resource small farmers or other interested individuals:

- a.) Teaching worksheets
- b.) Share Distribution guide
- c.) Production & marketing calendar of events
- d.) Sequential planting and Sequential harvesting guide (calculation spreadsheet)
- e.) Educational consumer marketing brochure templates
- f.) Introduction to CSA (LR Audiences) presentation and teaching Handouts

## Results

As a direct result of our collaborative horticultural research and marketing extension efforts, we have produced research based CSA production and marketing tools educators can use or adapt to teach limited resource small farmers how they can plan, produce and market through CSA.

The uniqueness of these developed tools is that they provide tangible, reality-based examples of how an entire CSA operation is planned out from the beginning (crop production based on customer needs) to the end (distribution of harvested crops to customers).

### Conclusions

This collaborative effort reflects a well-rounded approach to developing research-based alternative agriculture educational outreach tools that address both production challenges and marketing skills needed to confidently teach others how to successfully conduct a CSA operation.

On-going educator evaluation tools are needed to determine the immediate and long-term impacts of adapting and implementing the developed CSA educational outreach tools for use with limited resource small farmers. Educators should apply regionally based knowledge of agronomic data when teaching small farmers how to use or adapt the developed CSA educational outreach tools.

Educators should be aware of regional crop production variations and incorporate historic regional climatic data (i.e. Last and beginning frost dates, soil temperature, etc.) and location appropriate agronomic data (i.e. Crop varieties, soil fertility requirements, etc.) for optimal educational impact when adapting these CSA educational tools to reach limited resource small farmers.

### Outcomes and Impacts

The primary outcome of developing this set of CSA educational outreach tools will be to increase educator confidence in teaching alternative marketing strategies such as CSA to risk-averse, limited resource, small farmers. The ultimate impact of this collaborative effort is to increase the profitability and sustainability of current and future small farmers who are experiencing conceptual challenges of how to develop and market a CSA operation.

### Acknowledgements

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# Typology of America's Small Farms: Characteristics in 2003

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Farms vary widely in size and other characteristics. They range from very small residential and retirement farms to farms with sales in the millions. The U. S. Department of Agriculture's Economic Research Service (ERS) has developed a farm typology that classifies farms into more homogeneous groups, based largely on operator occupation and farm sales class. This method produces a more effective tool than classifications based on sales class alone.

The typology identifies five groups of small family farms (sales less than \$250,000): limited-resource, retirement, residential/lifestyle, farming occupation/lower sales, and farming occupation/higher sales (see box). To cover the remaining farms, the typology also classifies all other farms into large family farms, very large family farms, and non-family farms. Small farms account for 91 percent of the farm count and 71 percent of farm assets—including land—but only 27 percent of agricultural production (see figure).

The small farm groups differ in their contribution to agricultural production, their product specialization, program participation, and dependence on farm income.

The diversity of today's farms has some implications listed below:

- **Production is concentrated among large family farms, very large family farms, and nonfamily farms.** The nation relies on larger farms for most of its food and fiber, despite the large

number of small farms.

- **Different policies affect diverse family farms in different ways.** The variety of farm types—what they produce and their differences in characteristics, economic situation, and household and business arrangements—make different policy instruments appropriate for different portions of the family farm population.
- **Commodity program payments go mostly to high-sales small farms, large family farms, and very large family farms.** These farms produce most of the commodities that farm programs have traditionally supported.
- **Small family farms are an important factor in conservation policies because of the large share of farmland they hold.** Policies addressing natural resource quality and conservation affect many small family farms.
- **If high-value enterprises are to be adopted by small farm operators—suggested by many small farm advocates—compatibility with part-time farming is important.** Many small farms specialize in cattle for a very practical reason. Cow-calf operations require limited hours of work, with some flexibility as to when the work is performed.

- **The nonfarm economy is critical to household operating small family farms.** Because small-farm households rely on off-farm work for most of their income, general economic policies, such as tax or economic development policy, can be as important to them as traditional farm policy.
- **Nevertheless, such measures as extension education targeted specifically at small farms could help some small farm families increase their income.** Trying to raise earnings from farming may be particularly appropriate for limited-resource farmers. Even modest improvements in household income could be important to these low-income farmers.

Farm Typology Group Definitions for 2003	
Small Family Farms (sales less than \$250,000) <sup>1</sup>	Other Family Farms
<p><b>Limited-resource farms.</b> Small farms with sales less than \$100,000 in 2003, and low operator household income. Household income is considered low if it is less than the poverty level for a family of four in both 2003 and 2002, <i>or</i> it is less than half the county median household income both years. Operators may report any major occupation except hired manage</p> <p><b>Retirement farms.</b> Small farms whose operators report they are retired<sup>2</sup></p> <p><b>Residential/lifestyle farms.</b> Small farms whose operators report a major occupation other than farming<sup>2</sup></p> <p><b>Farming-occupation farms.</b> Small family farms whose operators report farming as their major occupation.<sup>2</sup></p> <p style="padding-left: 40px;"><b>Low-sales farms.</b> Sales less than \$100,000.</p> <ul style="list-style-type: none"> <li>• <b>High-sales farms.</b> Sales between \$100,000 and \$249,999.</li> </ul>	<p><b>Large family farms.</b> Sales between \$250,000 and \$499,999.</p> <p><b>Very large family farms.</b> Sales of \$500,000 or more.</p>
	<p><b>Nonfamily Farms</b></p>
	<p><b>Nonfamily farms.</b> Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers.</p>
	<p>Note: The farm typology focuses on the "family farm," any farm organized as a sole proprietorship, partnership, or family corporation. Family farms exclude farms organized as nonfamily corporations or cooperatives, as well as farms with hired managers.</p> <p><sup>1</sup>The National Commission on Small Farms selected \$250,000 in gross sales as the cutoff between small and large.</p> <p><sup>2</sup>Excludes limited-resource farms whose operators report this occupation</p>

# Effective New Farmer Education Evaluation

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## **Background**

January 2000 marked the onset of a 4-year, multifaceted project dedicated to supporting the success of new farmers in the Northeast. The Growing New Farmers project was a USDA grant-funded initiative managed by the New England Small Farm Institute in Belchertown, MA, which was responsible for coordinating the efforts of over 170 service providers in a 12-state region. In addition to supporting the development of a consortium of service providers, a "one-stop" web site resource for new farmers, and a policy tool kit for new farmer supporters and public policy educators, the project supported empirical research designed to better understand the experiences and needs of new farmers. This article and the corresponding conference workshop are about one of the research projects, a 2-year study designed to evaluate the effectiveness of the variety of types of learning programs available to new farmers in the Northeast. The purpose of this article is to provide an overview of the study. In the workshop, participants will share their own experiences of effective farmer education and contribute recommendations for enhancing educational opportunities and services for new farmers.

## **Description of the Study**

This qualitative study explored how new farmers learn and apply the knowledge and skills they need to be successful, and the effectiveness of different types of new farmer learning programs in preparing new farmers for success.

The specific goals of this study were to:

1. Describe the nature of proficiency, or "know how," among a sample of successful new farmers in the Northeast.
2. Identify learning experiences that successful new farmers consider most significant to the development of their proficiency.
3. Evaluate how different types of new farmer learning programs in the Northeast (including land-grant university programs, cooperative extension, apprenticeship, youth programs, immigrant farmer programs, and farmer-to-farmer programs) contribute to the development of proficiency among new farmers.
4. Formulate recommendations based on study outcomes for individual farmers, learning programs, and policy makers for supporting the learning of new farmers in the Northeast.

For the purposes of this study, successful new farmers were defined as beginning farmers who had completed re-strategizing efforts and were on their way to becoming established farmers. This definition is consistent with the multifaceted typology of new farmers developed by the Northeast New Farmer Network Project (Sheils, 2004). Table 1 provides a description of the three study phases, the research questions that were answered in each phase, and the methods used to answer each research question.

## Data Collection Methods

The 10 new farmers who participated in Phase One of the study were selected through a process of peer and service-provider referral, which resulted in a list of successful small-scale farmers representing different farming approaches (e.g., conventional, organic), commodities (e.g., vegetable, dairy, poultry), marketing strategies (e.g., direct, wholesale, CSA), and geographic regions (e.g., mid-Atlantic, upstate NY). The sample emphasized sustainable and organic practices to reflect growing trends in the Northeast and the USDA Small Farms Commission (1998) policy recommendations emphasizing sustainable agriculture as a profitable, ecological, and socially sound strategy for small farms. The seven instructors who participated in Phase Two were invited to participate via a similar referral process that included referrals from peers and farmers. Six different types of new farmer learning programs were represented in the sample including land-grant university programs, cooperative extension, apprenticeship, youth programs, immigrant farmer programs, and farmer-to-farmer programs. Data collection from farmer and instructor participants included on-site semi-structured interviews and observations (completed between July 2001 and July 2002), follow-up conversations, and collection of "artifacts" such as curriculum materials from instructors and marketing plans from farmers. Additionally, farmer participants completed a short survey of learning activities, indicating activities they perceived as most important to their professional development.

## Results

Table 2 represents the researchers' answer to Research Question 4 posed in Phase Two of the study. The grid is constructed so that the results of Research Questions One, Two, and Three (i.e., the nature of proficiency among successful new farmers, the

activities they use, and how they engaged in the activities) are listed in the left vertical axis. The six different types of learning programs are listed across the top horizontal axis. Notations in the grid boxes are based on analyses of all the data and indicate the extent to which each type of program characteristically supported new farmers in (a) developing the requisite knowledge and skills, (b) experiencing key learning activities, and (c) engaging in a variety of learning contexts. The footnote to the table includes an acknowledgement that variability exists in the Northeast among programs in each category, and that the profile of characteristics for any specific program may be different from the overall profile indicated in the grid.

## Conclusions

Key conclusions based on study results about successful new farmer learning and the effectiveness of learning programs in supporting new farmer success included:

1. New farmers in the Northeast use a variety of learning programs during the course of their learning and professional development, and they assess the value of a learning opportunity based on a perceived match between their personal mental model of farming and the mental model portrayed by an instructor and/or program.
2. As currently designed, some programs excel at supporting specific types of learning, yet no one type of learning program in the Northeast excels at supporting the development of all the types of knowledge and skills new farmers need to be successful.
3. All learning programs can enhance their effectiveness by supporting the development of all types of knowledge and skills new farmers need to be successful (i.e., domain-specific, meta-cognitive, and

tacit/strategic) using methods that incorporate problem solving, discovery learning, hands-on experience, peer learning, and articulation of mental models.

### Recommendations

Key recommendations for new farmers, educational programs, and policy makers included:

1. Prospective and beginning farmers can complete a self-assessment of learning needs and interests and develop an "individual learning plan." They can then identify learning programs with characteristics that will meet their needs and interests. Table 2 can serve as a starting place for matching individual needs and interests with program characteristics.
2. Learning programs with complementary characteristics can form formal or informal alliances or partnerships to offer more balanced and comprehensive learning experiences for new farmers. For example, complementary programs for individuals entering farming as a first career include youth programs, a 4-year college degree program, and an apprenticeship program. Complementary programs for individuals entering farming as a second career or beginning farmers with no farming background include cooperative extension services, organization-sponsored workshops and conferences, and farmer-to-farmer programs.
3. Policy can support learning programs and other service providers in (a) completing self-assessments of

resources they have or need to promote learners' development of all the types of knowledge and skills new farmers need to be successful and to develop a plan to enhance their resources in identified areas, (b) testing out or adopting more problem-based curriculum and designing curricula around application of content to solve genuine problems, and (c) continuing professional development of instructors and service providers to maximize their effectiveness in facilitating new farmer learning.

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For more information about this study's methods, results, recommendations, and references please contact Alexandra (Sandy) Bell at the University of Connecticut ([sandy.bell@uconn.edu](mailto:sandy.bell@uconn.edu)).

**Table 1. Study Phases, Research Questions, and Methods**

Phase	Research Questions	Methods
<p><b>One</b> Establish criteria on which to evaluate the effectiveness of learning programs by finding out what makes new farmers successful and what types of learning relate to their success.</p>	<p>RQ1 What is the nature of proficiency, or “know how,” among successful new farmers in the Northeast?</p> <p>RQ2 What activities help successful new farmers develop proficiency?</p> <p>RQ3 How do successful new farmers engage in these activities?</p>	<p>Semi-structured on-farm interviews with 10 successful new farmers representing six different types of enterprises and five different states. Included completion of <i>Learning Activities Survey</i>.</p> <p>Written profiles of 17 “innovative” farmers from <i>The New American Farmer: Profiles of Agricultural Innovation</i> (Berton, 2001).</p>
<p><b>Two</b> Find out how different types of learning programs help new farmers learn, and evaluate the extent to which each program type meets the criteria established in Phase One.</p>	<p>RQ4 How do different learning programs contribute to the development of new farmer proficiency?</p>	<p>Semi-structured on-site interviews with seven “exemplary” instructors of new farmers representing six different types of learning programs and five different states.</p> <p>Review of program marketing materials, curriculum materials, and student learning “artifacts.”</p> <p>Review of publicly available materials from other programs.</p> <p>Transcript of web-based course for instructors (contributions of four participants).</p>

<p><b>Three</b></p> <p>Use the outcomes in Phases One and Two to make recommendations for facilitating learning that promotes new farmer success.</p>	<p>RQ5 What implications do the outcomes have for:</p> <ul style="list-style-type: none"> <li>a. Prospective and beginning farmers in their selection of learning programs?</li> <li>b. Service providers in supporting new farmer learning?</li> <li>c. Policy makers in making policy and resource allocation decisions to support new farmer learning?</li> </ul>	<p>Data analyses.</p> <p>Establish trustworthiness by data triangulation, peer debriefing, member checking, farmer advisor reviews of transcripts and interpretations, and review of current literature.</p> <p>Collaboration with other GNF researchers, service providers, and farmers.</p>
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**Table 2. How Different Learning Programs contributed to the Development of New Farmer Proficiency (Phase Two) \***

	College degree programs	Cooperative Extension Services	Apprenticeship programs	Youth programs	Immigrant farmer programs	Farmer-to-Farmer programs
<b>RQ1 Proficiency</b>						
Domain-specific knowledge	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Metacognitive skills	x	x	<b>X</b>	<b>X</b>	x	x
Tacit and Strategic knowledge	--	x	<b>X</b>	x	x	x
Mental model development, articulation, and organization	x	x	<b>X</b>	<b>X</b>	x	x
<b>RQ2 Activities</b>						
Discovery learning/ problem solving	x	x	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Activating events	x	x	x	x	x	x
<b>RQ3 How to Engage in Activities</b>						
On-farm experience	x	x	<b>X</b>	x	<b>X</b>	x
Self-directed informal learning with others	x	x	x	x	x	<b>X</b>
Other farmers or peers	--	x	<b>X</b>	x	<b>X</b>	<b>X</b>
Experts	<b>X</b>	<b>X</b>	x	<b>X</b>	<b>X</b>	<b>X</b>
Consumers	--	--	x	x	x	x
Other-directed formal education	<b>X</b>	<b>X</b>	x	x	x	--

**X** = Was a defining characteristic of this type of program

x = Was a secondary characteristic of this type of program

-- = Was rarely a feature of this type of program

\* The characteristics indicated in the grid are based on an overall assessment of data collected during Phase Two of the study. The researchers acknowledge that variability exists in the Northeast among programs in each category, and that the profile of characteristics for a specific program may be different from the overall profile indicated in the grid. Additionally, an individual farmer's perceptions of the characteristics of a program in which he or she was involved may be different from the profile indicated in the grid. Program representatives can use the grid as a guide for self-assessment and program development, and new farmers can use the grid as a guide for identifying attributes of program types that may match individual learning needs and interests.

# Adding Value to Outreach Activities

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## Introduction

Cooperative Extension advisors and other educators who work directly with farmers are acutely aware of the mounting pressures on small-scale farmers as agriculture is increasingly consolidated. They demonstrate their personal commitment to Cooperative Extension's mission in agriculture, in which "research and educational programs help individuals learn new ways to produce income through alternative enterprises, improved marketing strategies, and management skills and help farmers and ranchers improve productivity through resource management, controlling crop pests, soil testing, livestock production practices, and marketing" (U.S. Dept of Agriculture, ¶ 16).

Educators often define their responsibility to help farmers learn as a matter of presenting information and sound advice, and they are dedicated to providing accurate and current research-based information. In fact, farmers' success depends not only on getting information, but on their skillful application, or proficiency, in using new information. Agriculture professionals can increase the likelihood that farmers will apply new information by designing and conducting education and outreach activities in keeping with how farmers learn and develop proficiency. We call such activities "value-added education."

This paper is designed to provide background information to supplement active learning elements of the workshop "Adding Value to Outreach

Activities." Ideas and references are drawn from research and theory of adult learning and workplace learning, and from our study of proficiency and its development among small-scale farmers, which was supported by a USDA grant to the New England Small Farm Institute for the *Growing New Farmers* project. (Eckert, 2003; Bell & Eckert, 2005).

The study that informs this workshop and paper was conducted in 2002-2003. Ten small-scale farmers throughout the northeastern United States were interviewed and surveyed about their knowledge, skills, and learning. An additional 75 beginning farmers were surveyed about learning experiences they perceived to be most beneficial to their professional development, and 17 profiles of small-scale farming operations throughout the U.S. were analyzed to check and extend the interview themes and survey findings. Findings from this exploratory study concerned the nature of proficiency among small-scale farmers, how farmers develop proficiency, and the formal education and informal learning activities that contribute to their learning.

## Proficiency and its Development

The nature of proficiency. Individual proficiency, defined as the skillful application of knowledge (Sheckley, 2002), is comprised of domain-specific knowledge, tacit knowledge, and metacognitive skills. Domain-specific knowledge is factual knowledge and information, the kind of information

most frequently presented in education and outreach activities. Tacit knowledge is known but not amenable to articulation or explanation; for example, a farmer who “just knows” when an animal is ill and what is wrong demonstrates tacit knowledge. Metacognitive skills refer to an individual’s ability to plan, monitor, and evaluate actions, and transfer knowledge and skills appropriately and effectively to new situations.

This knowledge and skills is self-organized in that individuals develop, usually at a nonconscious level, their own way of making sense of what they know and how they apply their knowledge. Farmers use mental models to self-organize their knowledge and skills, and to guide learning, practice, and problem solving. The mental model is an individual “mental map” or set of assumptions about farming that includes the individual’s values and beliefs about the ideal and the actual domain of farming; the role and relative importance of values, beliefs, knowledge, and skills; and ways of processing information and applying skills to learn and solve problems (Eckert & Bell, 2005). For example, even among operations of the same type we found farmers with different mental models of farming that directed their farming practices (see Table 1).

The development of proficiency. Farmers in our sample develop proficiency through discovery learning and problem-solving. Discovery learning refers to learning that occurs through trial-and-error as well as other activities conducted with the goal of mastering a skill such as learning to use some equipment. Trial-and-error was a significant source of learning for the farmers in the study. Problem-solving differs from discovery learning in that it is undertaken in response to a problem, while discovery learning can be unintentional and incidental. Discovery learning and problem solving tend to

support and build upon an existing mental model; however, occasionally a powerful “activating event” causes farmers to question or even transform their mental models, or parts of their mental models. In some cases, only a threat such as that of the farm’s failure is a powerful enough activating event to cause a farmer to examine and change her or his mental model.

Discovery learning and problem solving occur within “ecologies”—i.e., the totality of interactions between the farmer and his or her environments; the farm itself, family and others on the farm, and other farmers, experts, and often consumers. Feedback and advice from experts and others play a role in the development of proficiency, but that role is not simple or straightforward. While the environment shapes the individual, in our study we found that through self-organization, the farmer also shapes her or his environment. Farmers who were interviewed discussed how informal discussions with farmers from other farms played a role in the development of proficiency. Coherence of mental models between the individual and the learning environment—in this case, workshops, conferences, and peers—contributes to individuals’ formal and informal learning from others in their ecologies. Farmers in the study who were involved in direct marketing tended to learn from their customers, in some cases even involving them in their operations; for example, explicitly involving CSA members in recruitment of new members.

Research on learning in work and school environments suggests that feedback is an important element of learning, and that autonomy support on the part of the person giving feedback is important to how the feedback is received and used. Support for autonomy generally takes the form of suggesting, advising, or presenting options rather than framing feedback in directive terms such as, “In order to succeed, you must do

this.” Among farmers in our sample, the self-determination of the farmer was the salient element of whether and how feedback was used. Farmers chose whether and how to implement feedback from experts based on their assessment of its usefulness and fit with their mental model. All of the farmers using sustainable practices talked about learning from communication with consumers; neither of the conventional farmers mentioned communication with consumers as part of their ecology. Self-determination on the part of the farmer is a strong factor in learning with and from others.

The farm itself is an important part of an ecology that supports the development of proficiency. Research reviewed for this study did not specifically address the role of the physical environment in the development of proficiency. In this study, most farmers in the sample noted the importance of learning from the unique environment of each farm. Their perceptions of the uniqueness of their own farms may have been one of the factors affecting the importance of self-determination and of self-organization for farmers.

To summarize, research findings on proficiency and its development in the workplace in general, and among farmers in particular, indicate that each farmer develops proficiency within an individual mental model that serves as a self-organizing mechanism for domain-specific knowledge, tacit knowledge, and metacognitive skills. Further, the mental model serves as a filter for experience, further learning, and transfer or application of knowledge and skills to new situations. The mental model is maintained and refined through discovery learning and problem solving. The mental model is sometimes revealed and even transformed as a result of powerful experiences we call activating events, events that challenge some previously unquestioned aspect of the mental model. Farmers develop

proficiency through their activities within an ecology; that is, the physical environment of their farms and interactions with family members, peers, experts, and sometimes consumers. These findings, taken within the context of adult learning theory and best practices in general, point to several strategies that agricultural educators can use to support the development of proficiency among the farmers with whom they work. We consider that these strategies add value to outreach and other learning-oriented activities.

#### Some Strategies for Enhancing Learning and Adding Value to Education and Outreach Activities

- Trigger awareness of mental models. Early in the workshop, find out what background knowledge, beliefs, and interests your learners bring to the workshop or training, and use that information to tailor your presentation or activities. You might ask if there is a specific problem they hope to solve by attending the workshop and use that knowledge to tailor your presentation or examples to their needs.
- Maximize learning with and from others in the environment. Allow time during the workshop or training for people to think, discuss, add to, and plan how to use the information you’re providing.
- Provide opportunities for discovery learning and problem solving. Whenever possible, make your workshop or training a “hands-on” activity, and involve everyone. When a single person is the hands-on demonstrator, that person is the only one who gets the full value of the activity. To make sure people can do what you’re teaching; have them actually do it, with guidance and feedback from you.

- Provide more opportunities for discovery learning, problem solving, and learning from others in the ecology. Get your learners involved. Have them critique the information you present, have them discuss it with each other and with you, have them identify the barriers to applying the information and see if they can come up with solutions.
- Respect your learners' autonomy. Avoid absolutes and one-size-fits-all answers. Any time you tell someone they "must" do something in order to be successful, you undermine their sense of power and autonomy.
- Enhance metacognitive skills by helping learners monitor and evaluate what they have learned and plan their next steps. Near the end of the session, pass out index cards and ask learners to answer one of these questions, then collect the cards and address common questions:
  - What is the most important thing you learned from this session?
  - What is one point that is still unclear, or a question that was left unanswered?
  - What could you do differently on your farm after this session?
- Provide opportunities to transfer and apply what has been learned to the unique environment of the farm. Follow up, or give people the opportunity to follow up themselves. If the presenter or trainer will not be available after the workshop, provide another contact person who can help, or have those learners who are willing to exchange contact information so they can help each other.

Educators who can incorporate one or more of these suggestions might be

surprised at the positive results they get by making information more user-friendly and applicable—packaging, marketing, and delivering information to farmers in ways that they can use really does "add value" to workshops and trainings.

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**Table 1. Comparison of Mental Models among Three Dairy Farmers**

Name	Description of operation	Focal point(s) of mental model	Activities in keeping with mental model
Joe	300-cow dairy herd, goal is to grow to 1000-cows	Success means becoming a "top dairy" by increasing herd size and meeting industry standards.	Developing partnership, evaluating decisions based on evidence, "being involved in the top percentage of the farming community."
Mary Doerr (Berton, 2001, pp. 17-19)	36-goat dairy herd, cheesemaking, pasture, "educational retreat" Bed & Breakfast, goal is to stay small and profitable through diversification	Success means, "creating balance," by running a holistic operation and earning higher prices with a lower level of production and direct marketing.	Scaling back dairy and cheesemaking operation, retailing instead of wholesaling, diversifying farm activities
Gordon and Marion Jones (Berton, 2001, pp. 68-70)	65-cow dairy herd, pasture, goal is to stay small and maintain balance in keeping with quality family life	Success means maintaining commitment to quality family life and economic and environmental sustainability.	Developing and refining rotational grazing system, careful financial planning, hiring outside help

# Sustainable Agriculture Research and Education: Supporting Diversity in American Agriculture

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The Sustainable Agriculture Research and Education (SARE) program aims to advance knowledge and use of farming and ranching practices that improve profitability, environmental stewardship and quality of life. We do so primarily through competitive grants offered through four regions, hosted by land-grant universities under the direction of councils that include farmers and ranchers along with representatives from universities, government, agribusiness, and nonprofit organizations. We provide coordination at the national level, and also cull information from grants and other sources into national books, bulletins, and electronic resources through our national outreach arm, the Sustainable Agriculture Network (SAN). More details on the grants and information are at [www.sare.org](http://www.sare.org)

Sustainability is important to farms of all sizes and types, though specific approaches to sustainability may vary considerably across different scales and setting. SARE is particularly relevant to small and medium-sized family farms, and to minority and limited-resource farmers, for several reasons, including its focus on ecologically-based rather than capital-intensive methods; its commitment to farmer-led innovation and farmer-to-farmer information exchange; and its interest in marketing (including direct marketing and ethnic markets) as well as production alternatives.

Some of the many SARE projects that have addressed minority, socially disadvantaged and limited-resource producers are featured in the SAN bulletin "Meeting the Diverse Needs of Limited-Resource Producers: An Educator's Guide" which is on the web at

[www.sare.org/publications/limited-resource.htm](http://www.sare.org/publications/limited-resource.htm) This guide includes projects where:

1. Small producers in Appalachian Ohio cultivated ginseng and other forest-farmed crops
2. Hmong and Cambodian farmers in Massachusetts learned about sustainable agriculture practices
3. Latino and Native American farmers in New Mexico grew organic wheat and milled and marketed flour
4. African American producers in rural Illinois marketed vegetables and chicken in Chicago
5. Small farmers in Kentucky learned production and marketing methods at monthly field days
6. Farm laborers in California gained production and marketing experience to be independent farmers
7. Low-income, primarily African American North Carolina farmers raised pigs on pasture
8. Tobacco growers in Appalachian Virginia and Tennessee switched to vegetables and value-added processing
9. Rosebud Sioux in South Dakota raised vegetables to improve diets and combat diabetes

Many of these projects were led by community-based nonprofit organizations, often in partnership with Cooperative Extension or USDA agencies. The bulletin details methods that have been found by these projects to be particularly effective in reaching limited-resource producers, including:

1. Identifying the real barriers to participation in programs.
2. Creating effective materials

designed with appropriate literacy levels in mind.

3. Involving constituents in developing programs, asking them what they need to know and how they like to learn.
4. Establishing trust by making commitments and honoring them.
5. Working together side-by-side.
6. Going one-on-one in training settings.
7. Demonstrating in field settings rather than just classrooms.
8. Tapping community leaders to run programs including paraprofessionals, volunteers and specially-trained people.

In recent years, the SARE regions and national office have taken a number of steps to better address diverse populations in American agriculture, including:

1. Southern SARE has established an Office of Minority Outreach which includes a full time professional staff position and support located at Fort Valley State University
2. Southern SARE is continuing its longstanding priority area in grant programs that benefit limited-resource farmers, and has established a new priority area of women in agriculture
3. Southern SARE provided travel scholarships to over 250 farmers mostly minority farmers to attend a regional sustainable agriculture

meeting.

4. Western SARE completed its third year of targeted funding for small professional development grants with the Extension Indian Reservation Program.
5. Northeast SARE has funded several immigrant farming projects in recent years including the Northeast Network of Immigrant Farming Projects.
6. North Central SARE has offered funds through its professional development program specifically for working with underserved populations.
7. SARE's national Sustainable Agriculture Network (SAN) published a Spanish version of its popular bulletin on strategies for hog producers "Estrategias Economico-Ambientales en la Crianza de Cerdos" and has contracted with an outreach specialist to identify ways to reach Latino audiences.

SARE's leadership is eager to further develop its ability to reach minority and under-served audiences. Current efforts include attracting minority and under-served farmers and educators to the next SARE conference (in Oconomowoc, Wisconsin on August 15-17, 2006, see [www.sare.org/ncrsare/2006\\_national\\_conference.htm](http://www.sare.org/ncrsare/2006_national_conference.htm)) and increasing interactions with 1994 land-grant tribal colleges.

# Sustaining Agriculture at the Community College Level

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## **What role can the community college play in the sustainable agriculture movement?**

Community colleges have the ability to respond to the education and training needs of the local community. In order to foster the growth of the sustainable agriculture movement across the country, we ought to be engaging the community college resources.

The **Sustainable Farming Program at CCCC** grew out of a desire to address the needs of the sustainable farm community in Chatham and surrounding counties. The mission statement: A cooperative effort to encourage the development of profitable, environmentally sound, community-based farm enterprises

## **Current Features of the Sustainable Farming Program**

An overview of where we are now:

- Associate Degree in Sustainable Agriculture
- Continuing Education Courses in many aspects of Sustainability
- On-campus, organic farm – the “Land Lab”

## **Associate Degree in Sustainable Agriculture (A.A.S.)**

The curriculum, designed as a two-year program, includes classes in soil, plant and animal science, organic crop production, biological pest management, sustainable livestock management, building and mechanical skills and agricultural marketing. Additional studies focus on the entrepreneurial aspects of small farm ownership.

## **Credentialed Certificates in the curriculum program**

Certificates focus on a specific aspect of production:

- Sustainable Agriculture Vegetable Production Certificate
- Sustainable Agriculture Certificate combines livestock and crop production
- Livestock Production Certificate
- Certificates are focused, providing students with technical information needed to begin farming. Often, Certificate students have earned a 4 year university degree.

## **Continuing Education Courses**

- Flexible and responsive formatting
- Focused topics such as “Cut Flower Production”, “Sustainable Poultry Production”, “Raising Dairy Goats”
- Typically evening or late afternoon classes, structured to suit students with full-time occupations
- Inexpensive!
- Community members and students in the agriculture curriculum enroll in the variety of Continuing Education courses offered.

## **Land Lab component**

- Practical application of coursework
- Used by curriculum and continuing education programs
- Work-study opportunities for students
- Community Support Agriculture Project serving faculty and students, provides a marketing experience for students

## **How we got here**

A collaborative, grassroots effort was key to the successful development of the Sustainable Farming Program. That collaboration included farmers, extension agents, consumers, representatives of several sustainable agriculture focused on Non Governmental Agencies, CCCC Small Business and Continuing Education

personnel.

### **Collaborators develop the program mission...**

A cooperative effort to encourage the development of profitable, environmentally sound, community-based farm enterprises

### **Certificate of Farm Stewardship**

In 1997 CCCC began offering the initial credential in the area of sustainability. Students completed core coursework, a production concentration and an internship

### **The Sustainable Agriculture Curriculum Program development began in 2000**

Selection of coursework was based on:

- experiences with the Continuing Education Certificate of Farm Stewardship
- Feedback from students
- Advisory group composed of farmers and educators who have been involved with the Program throughout it's development
- Other agriculture degree programs as models

### **Who are our students?**

Degree Program students are typically:

- Over 25 years of age
- Have some prior college experience
- Most will be first generation farmers

- About 2/3rds of the students are female

### **Continuing Education students:**

- Ages range from 20 something to 65 +
- Many mid-career folks have land and are looking for added income/ second career
- Often crossover from the degree program for specific enterprise focus

### **Program challenges**

- Farming is generally entrepreneurial – community college programs are often job-training focused
- Fitting the farming calendar to the school calendar
- Finding suitable texts and teaching resources with a sustainable agriculture focus

### **Program Successes**

- Some continuing education courses are in their 8th year and are still popular
- Curriculum program still building, Fall 2005 is our best semester for enrollment
- Several program graduates farm and sell produce at local markets, work in produce departments and in educational programs centered around agriculture

## Programming and Support for Beginning Farmers

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**The problem.** Perhaps you have heard the startling statistics. There are twice as many farmers in the U.S. over the age of 65 as under 35. Twice as many farmers retire every year than are getting started in farming and ranching. Over 400 million acres of farmland will change hands in the next twenty years. At stake are our productive farmlands, bucolic landscapes, local economies and food systems. In the face of these daunting trends, the question is: who will farm?

Young farmers used to learn the trade at their parents' knees, or from relatives. Traditionally, farm succession included the passing on of skills and knowledge as well as the farm business. Land grant institutions and vocational high schools and colleges taught agricultural skills much more extensively. Extension agents traveled from farm to farm, providing one-on-one technical assistance and spreading the latest farm techniques and news. Flourishing farm organizations such as Future Farmers of America and the Grange nurtured new farmers into a vital community where sharing of resources and advice was standard. Today, it is much harder for next generation farmers to acquire contemporary farming technical and business skills. Much of the traditional "support infrastructure" -- suppliers and services -- has vanished.

Nonetheless, there are people who want to farm. Calls come in every day to the New England Small Farm Institute and other farmer service organizations from people who want to pursue a career of some sort in production agriculture. Many creative, brave, and committed people want to get

into or have begun farming. But traditional sources of information and learning don't meet the needs of today's new farmers. Yesterday's new farmers were the sons of established farmers -- heirs to their land, their knowledge, and their support networks. Today they are from a wide range of backgrounds - men and women in their twenties and early thirties who were raised in the suburbs, immigrants from Asia, Latin America, and the Caribbean where agricultural traditions remain strong, people who grew up on farms and hope to take over the family farm or strike out on their own, and mid-life career changers and early retirees including high school teachers, carpenters, attorneys, military officers. Their enterprises and marketing strategies run the gamut from traditional commodities to organic produce, and grassfed livestock, for example.

These next-generation farmers may be interested in owning and operating their own farms, creating a farm business on leased or rented farm land, or becoming salaried employees of farm businesses or agricultural education centers. They may have adequate capital, but no practical farming experience. They may have great agricultural skills, but poor English, or poor credit. Each of today's new farmers brings a unique set of skills and needs to his or her farming career, and requires support and services that are responsive to these differences.

**What is a "new farmer"?** First, for this discussion, ranchers are included in our use of the term farmer. We begin with some basic terms and definitions.

- According to the US Department of Agriculture (USDA), a **beginning farmer** is one who has operated a farm for ten years or less. This is the definition used for USDA's Beginning Farmer Loan Programs. Some loan programs require that a beginning farmer also have at least three years of farming experience.
- A **young farmer** is a farmer under the age of 35. The Farm Bureau and the Farm Credit System have young farmer programs. A young farmer may be working with the older generation on the family farm.
- **Next-generation farmer** is another term used to describe young people who will be the next generation of farmers. Sometimes – but not always - - the term specifically refers to the next generation of the family to take over an existing farm.
- New farmer and **small farmer** agendas are sometimes confused in policy discussions. New farmers are not defined by scale or volume or income, but by their position on the farm development continuum. At the same time, many new farmers start small, have lower revenues, and farm part-time.

**The project.** In 1998, several Northeast organizations (FarmNet/Cornell University, Pennsylvania Farm Link, Rutgers University, and the New England Small Farm Institute) came together in a project called the Northeast New Farmer Network (NENFN). Their goal was to stimulate regional thinking and new programming to improve the number and success of new farmers in the region. NENFN was followed by the Growing New Farmers Project (GNF), a four-year initiative funded by USDA.

GNF was conceived as a comprehensive regional initiative to provide future generations of Northeast farmers with the support and expertise they need to succeed. GNF brought together service

providers from across the Northeast who committed to working with and advocating for new farmers from Maine to West Virginia.

GNF addressed the need for a strong, responsive service network for new farmers on many fronts: by funding and promoting new programs, generating new services and information, and creating a supportive, well-connected community of service providers to welcome, support, and meet the needs of the Northeast's new farmers. GNF was a special project of the New England Small Farm Institute, the grant recipient. GNF built a network of service providers to raise awareness about new farmer needs, spread the word about effective programs, and encourage collaboration and effective referral. Two hundred and fourteen organizations and agencies signed onto the GNF Service Provider Consortium, one of the largest regional agricultural service networks in the country. Consortium members participated in networking, professional trainings, electronic discussions, policy development, and regional conferences. They continue to share tools, information, resources and insights, and work together on advocacy and services for new farmers. GNF also sponsored the development of a cornucopia of new programs and resources for beginning farmers in our region.

GNF developed an innovative, interactive website for new farmers and service providers ([www.growingnewfarmers.org](http://www.growingnewfarmers.org)). The "one-stop" site serves as an information clearinghouse and virtual meeting place for new farmers and their service providers to connect with one and another exchange ideas. Features include: a searchable directory of programs, resources and organizations aimed at or helpful to new farmers; on-line learning, where farmers and service providers can create, teach, and take on-line courses; and publications, links, and other useful information for and about Northeast new farmers. GNF also sponsored two research studies – one on adult learning methods most successful

with new farmer audiences, and one examining the decision-making of new farmers.

**A typology of new farmers.** We also advanced a framework for understanding and working with new farmers. From focus groups, surveys and direct feedback, we posited a typology of new farmers:

Prospective farmers have not yet begun to farm. There are three phases of prospective farmers:

- "Recruits" might consider a career in production agriculture, for example, students in vo-ag high schools.
- "Explorers" are investigating a farming future, and may be gathering information, but have not yet made a commitment to farming.
- "Planners" have made a choice to pursue some sort of commercial production agriculture, but are not actually farming yet.

Beginning farmers also fall into several categories:

- "Start-ups" have been farming for three years or less.
- "Restrategizing" farmers, typically in their fourth to seventh years, are making adjustments to their farming enterprises. These include changes in farm size, crops, enterprise type, market outlet, and land tenure.
- "Establishing" farmers are stabilizing their farm enterprise in the final years of their beginning farmer phase.

This expanded concept of the "**new farmer**" goes beyond the traditional definition provided by USDA. It encourages regional service providers to develop a more comprehensive understanding of their new farmer "customers", and to develop more carefully targeted support services to meet their different needs. People who are exploring the possibility of farming, and those who are planning to farm are our future; they need special attention and services to nurture them along the farming career path.

**What do new farmers need?** GNF focused on four categories identified as major barriers for new farmers:

- Access to knowledge, information and training
- Access to land
- Access to financial resources
- Access to markets

Beyond these fundamental barriers, new farmers often experience inadequate social supports from family, community, and existing farmer and service networks. That is why our approach – to create and sustain a community of new and established farmers and providers – was critical.

We conducted an inventory of all the programs and services for new farmers in our twelve- state region. We identified many programming gaps and we reached an important conclusion: to serve new farmers most effectively, programs must be targeted specifically to the new farmer audience. Targeted programs are specifically developed for and offered to new farmers, and sometimes more particularly to certain kinds of new farmers. Workshops on farm start-up or finding land are considered targeted. Relevant programs and services are not specifically designed for new farmers. Many general programs -- for example, a workshop on crop rotation -- may be relevant and valuable to new farmers. A general farm business planning course, on the other hand, will not be very useful to a start-up farmer with no financial or market history. It is clear that more targeted programs are necessary to meet new farmers' particular needs.

**What else is being done help new farmers?** While it might seem obvious that next-generation farmers need support, there is no history of attention to new farmers and ranchers by the federal and most state governments. For the first time in its 140-year history, the USDA has a Beginning Farmer and Rancher Development Program on the books. Authorized in the 2002 federal Farm Bill, this grant program is designed to help

develop a wide range of eligible programs for beginning farmers. This achievement is the result of over a decade of work by a national network of beginning farmer advocates. This is good news. The bad news is that there is no money attached to the program; the program must be funded by Congress every year in its annual appropriations process. New farmer advocates must persuade the appropriators to fund this important program. Perhaps we will fare better in the future. Perhaps more attention will be focused on new farmers in the next Farm Bill.

The USDA Farm Service Agency administers several beginning farmer loan programs which are critically important. The Farm Credit System also has a Young, Beginning and Small Farmer program, and the Farm Bureau and Grange have young and beginning farmer programs. And while many vocational agriculture schools are actively discouraging students from entering production agriculture, FFA and 4-H are shining lights of opportunity for

aspiring farmers and ranchers. Across the country, there are about 15 "farm link" programs that connect farm seekers with exiting farmers. Many of these programs also provide a wide range of other services for new farmers, including start-up business planning, skill-based curriculum development, technical assistance and referral, as well as succession and transfer planning for exiting farm families. After all, the full circle of farming career opportunity has to include successfully passing on the farm – the land and the business – to the next generation, whether a family member or someone outside the family.

New farmers will be the stewards of our land and the producers of our food and fiber. New farmers will contribute to rural economies; new farmers will invest in land conservation; new farmers will innovate, take risks, and be entrepreneurial in order to thrive. Their survival depends on the resources provided by a complex and engaged support network. The future is theirs, and they depend on us.

# **Expand Your Horizons: Small Business Innovation Research**

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## **Introduction**

The Small Business Innovation Research (SBIR) program was established in 1983 as a technology transfer program with the goal of moving technologies developed in university and government laboratories out into the commercial marketplace. The purpose of the SBIR program is to stimulate technological innovation in the private sector, strengthen the role of small businesses in meeting Federal research and development needs, increase private sector commercialization of innovations derived from USDA-supported research and development (R&D) efforts, and encourage participation by women-owned and socially and economically disadvantaged small business firms in technological innovation. Each Federal Agency with more than \$100 million of extramural R&D is required to set aside 2.5% of these funds for an SBIR program. There are 11 Federal Agencies that participate in the SBIR program and they are the Dept. of Agriculture, Dept. of Commerce, Dept. of Defense, Dept. of Education, Dept. of Energy, Dept. of Homeland Security, Dept. of Health and Human Services/National Institutes of Health, Dept. of Transportation, Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation.

## **SBIR Program**

Government-wide the SBIR budget exceeds \$2 billion. The USDA SBIR program is one of the smaller SBIR programs and it had a budget in FY 2005 of \$19.2 million. Eligibility is limited to U.S.-owned, for-profit, small business firms located in the United States. Single proprietorships, including farmers, are also eligible. The primary employment of the project director must be with the small

business firm at the time of award and during the period of the grant award. Primary employment means that more than one-half of the project director's time is spent in the employ of the small business and it precludes full-time employment with another organization.

SBIR is a three phase program. Applicant small business firms initially apply for a Phase I grant that is usually limited to 6-8 months and to \$70,000 to \$100,000, depending upon the Federal Agency. The purpose of Phase I is to determine the technical feasibility of the idea contained in the proposal. Phase I grant winners are eligible to apply for a Phase II grant that usually is made for a period of 24 months and provides \$225,000 to \$750,000, depending upon the Federal Agency. Only Phase I winners are eligible to submit Phase II proposals. Phase II is the principal research and development effort and typically involves moving the technology from the proof-of-concept stage to the prototype or pre-commercialization stage. Phase III is the stage when technologies developed during Phase I and Phase II are commercialized. There are no SBIR funds provided during Phase III. Instead, it is anticipated that the small business firm will be able to attract whatever additional funding it may require from the private sector or other non-SBIR Federal programs to achieve commercial success.

## **USDA SBIR Program**

The USDA SBIR program awards grants in twelve broad topic areas. Applicants are free to propose any reasonable proposal that addresses an important problem covered by one of the topic areas and thus the ideas are investigator initiated. Proposals are evaluated by a confidential

peer review system utilizing expert scientific reviewers drawn from universities or government laboratories who meet in Washington as a review panel to decide which proposals are most meritorious and deserve funding. In addition to the panel reviews, additional ad-hoc reviews are solicited from top scientists with expertise appropriate for each proposal who submit written reviews but do not travel to Washington to participate in the panel.

### **Research Topic Areas**

The USDA SBIR program has a very broad focus. Research is supported in the following 12 topic areas: 1) Forests and Related Resources; 2) Plant Production and Protection; 3) Animal Production and Protection; 4) Air, Water and Soils; 5) Food Science and Nutrition; 6) Rural and Community Development; 7) Aquaculture; 8) Industrial Applications; 9) Marketing and Trade; 10) Wildlife; 11) Animal Waste Management, and 12) Small and Mid-Size Farms. In addition to the above topic areas, research is also encouraged that addresses issues of anti-bioterrorism, rural homeland security, and agriculturally-related manufacturing technology.

### **Small and Mid-Size Farm Topic Area**

In FY 2006 the USDA SBIR program added a new research topic area on Small and Mid-Size Farms. The objective of the research area is to promote and improve the sustainability and profitability of small and mid-size farms and ranches (hereafter referred to as small farms). The vast majority of farms in this country are small and they play an important role in the agricultural sector. The viability and sustainability of small farms is important to the Nation's economy and to the stewardship of our biological and natural resources. Small farms are also critical to sustaining and strengthening the leadership and social fabric of rural communities and this topic area encourages projects that emphasize how their project would contribute to the well being of rural communities and institutions. In particular, applicants

should emphasize how the results of their project would be disseminated to other small farmers and provide benefit to the small farm community. Emphasis is placed on the cultivation of alternative and specialty crops, production of specialty animal species, innovative ways to market these farm products, improvements in farm management and farm safety, more efficient use of natural resources in agriculture, and educational outreach efforts to small farmers.

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

(1) New Agricultural Enterprises - Efforts are needed to develop new agricultural enterprises that are small scale and focused on specialty farm products, both plant and animal, and on innovative ways to market these farm products through direct marketing, such as farmers markets or cooperatives where the financial return to the farmer is optimized, or through specialty market outlets that offer a higher financial return. Emphasis is encouraged on organic and natural foods, specialty animal products such as free-range poultry or natural beef, non-food specialty crops such as medicinal herbs, and value-added food and non-food products.

(2) Farm Management - Efforts are needed to develop tools and skills that are appropriate for small farms that will enhance the efficiency and profitability of small farms. New tools are also needed that will enhance farm safety. Development of new risk management tools to facilitate better planning is needed. Innovative ways to promote agro-tourism as a way to enhance farm profitability is encouraged.

(3) Natural Resources - Efforts are needed to develop farming methods scaled appropriately for small farms that are directed at more efficient use of natural resources. Particular emphasis is needed to develop sustainable farming practices.

(4) Educational Outreach - Efforts are

needed to develop new tools to ensure that new generations of small farmers have access to the information and resources they need to operate their small farms on a sustainable and profitable basis.

**The USDA SBIR program supports a wide range of R&D projects focused on important problems facing**

**American agriculture and rural development. The Small and Mid-Size Farm topic area supports R&D projects that have the potential to promote and improve the sustainability and profitability of small and mid-size farms. Innovative ideas on ways to achieve these goals are strongly encouraged.**

# **Agricultural Wildcatters, Have They Hit A Gusher With Medicinal Plants?**

**Randy Beavers**  
Sleepy Hollow Farm  
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Webster's Ninth New Collegiate Dictionary defines a wildcatter as "one who drills wells in the hope of finding oil in territory not known to be productive". Growers who produce medicinal plants often face many of the same challenges as traditional wildcatters. Unknown production potential or quality and markets which can, and often do, fluctuate wildly present significant risks. Therefore, to coin a phrase, I refer to these growers as agricultural wildcatters. Medicinal plant production is an area of agriculture which is just beginning to flourish and as such, requires a greater degree of technical knowledge to be successful. However, for those willing to learn the specialized techniques required to produce a high quality product, the rewards can be substantial.

Several factors combine to make medicinal plant production an attractive crop option, especially for small, limited resource growers. The market for medicinal plants has been traditionally supplied from wild collected sources. However, overcollection from the wild may have resulted in the decimation of many native medicinal plant populations. Current convention on International Trade in Endangered Species (CITES) regulations require certain listed herbs to have been cultivated for a specified number of years before they can be exported. This has resulted in many companies which produce herbal products no longer purchasing raw material which has not been cultivated with certified organic material receiving a premium price.

In addition, many medicinal plants can be produced on farmland not being used for other crops, such as forestland, and harvested before or after other regular

crops. Finally, one criticism traditionally charged to natural herbal products is the lack of standard levels of biologically active materials from natural plants. Wild collected plants have no predictable mix of bioactive ingredients, therefore cultivation offers the opportunity to minimize this variation at the point of production.

One example of the potential offered to growers of medicinal plants is represented by *Hydrastis canadensis* (goldenseal), the primary crop at Sleepy Hollow Farm. Goldenseal is considered by many authorities to be one of the most popular medicinal herbs in the U.S. This popularity and the resultant increase in wild collection prompted the U.S. government to sponsor a resolution to place goldenseal on the CITES Appendix List II in 1997. Brokers generally pay less than \$20 per pound for wild collected goldenseal while high quality, organically grown goldenseal can command a price of \$100 per pound or more.

While there remains much work to be done in order to make medicinal plant production viable for a greater number of growers, we believe that the current trends toward increased government regulation of herbal product quality and the wild collection of medicinal plants coupled with increased consumer awareness of the origin of the source of the products they consume will effectively mandate the development of cultivated sources of high quality medicinal plants. Will this result in a boom for producers? The answer is still unknown but, for those willing to explore new territory and measure their success in parts per million rather than bushels per acre, the prospects of a gusher are getting more probable everyday.

## **USDA/CSREES National Research Initiative New Funding Opportunity: Agricultural Prosperity for Small and Medium-sized Farms**

**Diana Jerkins**  
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The CSREES National Research Initiative (NRI) competitive programs in 2005 sponsored a new program to support research, education, and extension activities for small and medium-sized farms. This presentation will review the types of projects funded and opportunities for the 2006 funding initiative. Integrated research, education and extension projects were awarded to 15 grants for a total of \$5 million in 2005. These projects were eligible for up to \$500,000 for 2-4 years of support. Approximately \$5 million will be available for awards in 2006.

Sustaining the health and security of U.S. agriculture requires improved profitability and long-term prosperity for producers and rural communities, with particular attention to the viability and competitiveness of small and medium-sized operations. Prosperous small farms and rural communities are a function of balance between economic, social, environmental and biological factors. Although prior research has been conducted on each of these factors, little is known about the interplay between the factors, as related to small farms and rural economic development.

Small and medium-sized farms are challenged by limited economic opportunities and increasing concerns about environmental quality, as indicated by their low value of agricultural products sold, decreasing share of the food dollar, and the perceived trade-off between agricultural sustainability and economic viability. In recent years, these challenges have been magnified by changes in market conditions caused by tremendous demographic shifts, new

global markets and vertical integration, and the increasing competition for farm land for non-agricultural uses. Therefore, the purpose of this program is to foster interdisciplinary studies to improve our understanding of the interactions between the economic and environmental components important to the long-term viability, competitiveness and efficiency of small and medium-sized farms (including social, biological and other components, if necessary). These include small and medium-sized dairy, livestock, crop and other commodity operations. While small and medium-sized farms account for less than 25 percent of the value of all agricultural products sold in the U.S., the long-term viability of these farms is critical to the prosperity of rural people and places as these farms account for approximately 92 percent of all farms in the U.S. Therefore, the program will also foster interdisciplinary studies to enhance income accruing to small and medium-sized farms through value-added activities and in turn, their contribution to rural prosperity.

The purpose of the Agricultural Prosperity for Small and Medium-sized Farms program is to foster interdisciplinary studies and improve our understanding of the interactions between the economic, social, biological and environmental components important to small farms and rural economic development. Applicants are expected to propose hypotheses that are testable and to use quantitative approaches. Projects should address small farms, rural agricultural communities, or both small farms and rural communities when interrelated.