Creating and Sustaining
Small Farmers and Ranchers

7th National Small Farm Conference
SEPTEMBER 20-22, 2016

VIRGINIA BEACH CONVENTION CENTER • VIRGINIA BEACH, VA
Creating and Sustaining Small Farmers and Ranchers

7th National Small Farm Conference
SEPTEMBER 20-22, 2016

VIRGINIA BEACH CONVENTION CENTER • VIRGINIA BEACH, VA
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Thanks to the following Sponsors & Contributors at the 7th National Small Farm Conference

USDA Agricultural Marketing Services (AMS)
USDA Animal and Plant Health Inspection Service (APHIS)
USDA Food and Nutrition Services Supplemental Nutrition Assistance Program (FNS)
USDA National Institute of Food and Agriculture (NIFA)
USDA Natural Resources Conservation Service (NRCS)
USDA National Agricultural Statistics Service (NASS)
USDA Rural Development (RD)
USDA Forest Services Cooperative Forestry (FS)

Alcorn University Policy Research Analyst, Socially Disadvantaged Farmers and Ranchers
Concord Crossroads LLC
Farm Bureau
Farm Credit Council
Farmer Veteran Coalition
National Crop Insurance Services
Paradise Energy Solutions
Southern Sustainable Agriculture Research & Education Program (SARE)
The Tennie Group
Virginia Department of Agriculture and Consumer Services (VDACS)
VA Foundation for Agri Innovation and Rural Sustainability Board
Virginia Department of Conservation & Recreation
Virginia Peanut Growers Association
Virginia Tech
Welcome to the 7th National Small Farm Conference

Dear Conference Participants:

On behalf of the conference planning committees, our conference host Virginia State University in partnership with Virginia Tech, conference sponsors, land grant colleges and universities, community-based organizations, USDA Agencies, small farmers and ranchers, foundations, State Small Farm Program Coordinators, other public and private sector organizations, other stakeholders and customers, welcome to the 7th National Small Farm Conference. The conference’s theme, “Creating and Sustaining Small Farmers and Ranchers,” provides a forum to discuss programs and services that have been created as well share strategies to sustain more farmers and ranchers. For discussion at this conference are issues raised by stakeholders from land grant colleges and universities, community-based organizations, farm communities and others working with small farmers and ranchers. Sustaining programs is of essence if we are to promote and encourage innovative ideas that can be replicated in order to enhance economic opportunities and improve the quality of life for small farmers and ranchers nationwide. This conference builds upon the successes of previous conferences held in Nashville, Tennessee in 1996; St. Louis, Missouri in 1999; Albuquerque, New Mexico in 2002; Greensboro, North Carolina in 2005; Springfield, Illinois in 2009; and Memphis, Tennessee in 2012. This is a train-the-trainer conference consisting of several preconference short courses and program efforts focusing on critical areas such as marketing opportunities, traditional and alternative enterprises, food production and safety, risk management, urban agriculture, outreach, training and research and extension priorities.

Tuesday’s opening plenary begins with greetings and remarks to set the tone and direction of the conference while providing opportunities for networking. On Wednesday, the highlights include a keynote followed by farmers’ panel on small farm opportunities and challenges, and closing out the afternoon with educational tours. Thursday highlights presentations from series of tracks, networking lunch followed by a closing session, entertainment and drawings.

Many thanks to the faculty and staff at Virginia State University for hosting this event in partnership with Virginia Tech and USDA agencies, conference sponsors, the local Planning Committee, the Conference Planning Committee, and others for their hard work over the past two years in planning for the 7th National Small Farm Conference.

Sincerely,

Denis Ebodaghe, Ph.D.
Conference Chair &
National Program Leader for Small Farms

William Crutchfield
Conference Chair &
Director, Small Farm Outreach Program
Virginia State University
WELCOME TO THE 7TH NATIONAL SMALL FARM CONFERENCE

City of Virginia Beach

September 20-22, 2016

Dear 7th National Small Farm Conference:

On behalf of the members of the Virginia Beach City Council and the community, it is an honor and a privilege to extend an enthusiastic welcome to the National Small Farm Conference Attendees.

We appreciate the importance of the National Small Farm Conference and make a commitment to strive to exceed our customers’ expectations. You will delight in our City’s rich natural beauty, history, culture, excitement and diversity.

Many industry-related investments, private and public, have been made, and are continually made, to add to Virginia Beach’s overall appeal. In addition to the beautiful beach, nature trails and golf courses, enjoy the varied shopping experiences, excellent restaurants serving the finest seafood and regional cuisine. Discover and learn something new at the Virginia Aquarium — rated one of the top ten museum/aquariums in the United States.

It is group business like the National Small Farm Conference that adds fuel to Virginia Beach’s economic vitality and, without it, we would not be the same destination. Thank you for Bringing it to the Beach! I know that our Virginia Beach Convention & Visitors Bureau staff will work closely with you to ensure a most successful event.

We welcome the National Small Farm Conference, in Virginia Beach!

Sincerely,

William D. Sessoms, Jr.
Mayor
## Oral Presentations Summary

### Track# 1: Traditional and Alternative Farm Enterprise Development and Practices, Including Protected Agriculture (PA) and Urban Agriculture Opportunities for Small Farmers

#### SESSION# 1 (LEVEL 2; SUITE 2A)

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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</table>
| 8:00am - 9:30am | **Virginia State University 43560 Project.** Susan Cheek*, Fidelis Okpebholo, and Clifton Slade  
Strategies to Enhance the Sustainability of Small-Scale Goat Production. Uma Karki  
Overcoming the Obstacles of Non-timber Forest Products as a Small Farm Diversification Avenue. Katie Trozzo* and John Munsell |

#### SESSION# 2 (LEVEL 2; SUITE 2A)

<table>
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<tr>
<th>Time</th>
<th>Presentation</th>
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</table>
| 10:30am - 12:00 pm | **Introduction of Vegetable Soybean (Edamame) as an Alternative Crop in Southside Virginia.** Laban K. Rutto*, Shuxin Ren, Cliff C. Somerville, Theresa Nartea, Chris Mullins, Guo-Liang Jiang and John K. Raiford  
Specialty Crop Production Initiatives with Limited Resource Farmers in Texas. Peter A.Y. Ampim* and Billy Lawton  
Using Row Covers to Improve Sustainability of Vegetable Crop Farmers in Temperate and Tropical Climates. Ramon Arancibia  
Characterizing High Tunnel Microclimate in Hardiness Zone Seven and Eight of North Carolina. Sanjun Gu*, John E. Beck and Joseph A. Moore |

#### SESSION# 3 (LEVEL 2; SUITE 2A)

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<th>Time</th>
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</table>
| 1:30pm - 3:00pm | **Niche Markets for High Tunnel Production.** Susan G. Hill  
Educating Small Farmers, Workshops to Help You Get Started. Cynthia Rice*, Buddhi Gyawali, Marion Simon, Louie Rivers Jr., and Bijesh Mishra  
Healthy Food in the City: Urban Farms in RVA. Matthew Jones*, Sally Schwitters and Suzanne Pender  

#### SESSION# 4 (LEVEL 2; SUITE 2A)

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<tr>
<th>Time</th>
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</table>
| 4:00pm - 5:30pm | **Growing Small Fruits in Urban West Virginia.** Brad Cochran  
Sustainable and Urban Agriculture Program (SUAP) at Virginia State University. Leonard Githinji  
How Much Urban Agriculture is There? Linda J. Young* and Barbara Rater  
The 31st Street Baptist Church Farmers Market Story. Morris Henderson |

### Track# 2: Sustainable, Organic, and Locally Grown Food Production and Food Safety

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<tr>
<th>Time</th>
<th>Presentation</th>
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</table>
| 8:00 am - 9:30am | **Feral Swine Outreach Activities for Limited Resource Farmers and Ranchers in Texas.** Derrick Banks*, Corey Hicks, Billy C. Lawton, Alfred L. Parks and Nelson T. Daniels  
Production and Marketing of Turmeric as a Niche Crop for Small Farmers. Reza Rafie  
Optimizing Nitrogen Management on Organic and Biologically-Intensive Farms. Douglas Collins*, Andy Bary and Tuong Vu  
Growing Local Sustainable and Organic Farming Systems. Jennifer E. Taylor |
## Track# 2: Sustainable, Organic, and Locally Grown Food Production and Food Safety, continued

### SESSION# 2 (LEVEL 2; SUITE 2B)

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<th>Time</th>
<th>Presentation</th>
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<tr>
<td>10:3 am - 12:00pm</td>
<td><strong>Extension of Local Food Production in Idaho Using High Tunnel Technology.</strong> Jennifer Jensen*, Ariel Agenbroad, Tony McCammon and Steve Love</td>
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<td><strong>Reinventing the Wheel: A New Paradigm of Technical Services.</strong> Karen McSwain</td>
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<td><strong>Principles Guiding Practice: A Case Study Analysis of the Principles of Sustainable Agriculture for Diverse Farms.</strong> Marilyn E. Swisher*, Kelly N. Moore, Christine Kelly-Begazo and Kaylene Sattanno</td>
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<td><strong>The Benefits and Challenges of Machinery Sharing Among Small-scale Fruit and Vegetable Growers.</strong> Linda Naeve* and Georgeanne Artz</td>
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### SESSION# 3 (LEVEL 2; SUITE 2B)

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<th>Time</th>
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<tbody>
<tr>
<td>1:30pm – 3:00pm</td>
<td><strong>Sustaining Interest: GAPs Outreach for Small Scale Direct Market Produce Growers.</strong> Meredith Melendez* and Wesley L. Kline</td>
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<td><strong>Success Beyond the Workshop: Reinforcement with On-Line and Take Home Resources for Estate and Farm Transfer Planning.</strong> Robin Brumfield* and Meredith V. Melendez</td>
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<td><strong>Sustainable and Diversified Small-scale System of Agricultural Enterprises.</strong> Sandra Thompson*, Lawrence Carter, Trevor Hylton, Linda Sapp, Charles Brasher and Freddie Harris</td>
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### SESSION# 4 (LEVEL 2; SUITE 2B)

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<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>4:00pm – 5:30pm</td>
<td><strong>Success with NRCS: How Conservation Programs Can Help Your Operation.</strong> Jake Browder*, Cliff Slade and Suzanne Pender</td>
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<td></td>
<td><strong>Growing Ginger (Zingiber officinale) in a Temperate Climate.</strong> William L. Cox</td>
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<td></td>
<td><strong>Locally Grown Food in the U.S.: Collection of Agricultural Data.</strong> Barbara Rater* and Linda Young</td>
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## Track# 3: Land Grant University, States, Private Colleges Role in Sustaining Small Farmers and Ranchers

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<th>Time</th>
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<tbody>
<tr>
<td>8:00am - 9:30am</td>
<td><strong>Food Safety Outreach Program.</strong> Dawanna James-Holly</td>
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<tr>
<td></td>
<td><strong>Nebraska Extension Partners with other Organizations to Provide Educational Opportunities for Beginning Farmers, Educators and Consumers.</strong> Kathie Starkweather*, Gary Lesoing, Wyatt Fraas, Jessica Jones and Vaughn Hammond</td>
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<tr>
<td></td>
<td><strong>The Farm Service Agency Microloan Program.</strong> Michael Moore* and Carrie Novak</td>
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<td></td>
<td><strong>The Making of Agriculture: The Intersection of the Maker Movement and Modern Small Scale Agriculture and How Extension Professionals Can Encourage Both.</strong> Jennifer D. Totten and David Francis</td>
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### SESSION# 2 (LEVEL 2; SUITE 3C)

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<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>10:30am - 12:00pm</td>
<td><strong>USDA Market News - Reporting for You.</strong> Julie Hartley</td>
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<td><strong>Let’s Grow Our Own: Leveraging Resources and Creating Partnerships to Prepare New, Small-Scale Growers at the University of Arizona Cooperative Extension.</strong> Kelly Murray Young</td>
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<td></td>
<td><strong>Increasing Farm Capacity and Local Fruit and Vegetable Access for Families in West Virginia: Kids Koupon Pilot.</strong> Kristin McCartney*, Donald Reed, Dana Lester, Jennifer Graham and Loren Wells</td>
</tr>
<tr>
<td>Track# 3: Land Grant University, States, Private Colleges Role in Sustaining Small Farmers and Ranchers, continued</td>
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<td><strong>SESSION# 3 (LEVEL 2; SUITE 3C)</strong></td>
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<td>1:30pm – 3:00pm</td>
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<tr>
<td><strong>Hops in Virginia - Progress and Challenges.</strong> Laura Siegle* and Holly Scoggins</td>
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<tr>
<td><strong>Successfully Navigating the First Ten Years: Education Targeting Farm Developmental Stages to Achieve Long-Term Viability for Small Farms.</strong> Garry Stephenson* and Lauren Gwin</td>
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<tr>
<td><strong>Production and Marketing of Berries as a Potential Crop for Tobacco Growers in Southside Virginia.</strong> Jonathan Bobby* and Reza Rafie</td>
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<td><strong>Using Land Grant Soil Testing Resources to Optimize Your Production System.</strong> Mark Reiter* and Rory Maguire</td>
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<td><strong>SESSION# 4 (LEVEL 2; SUITE 3C)</strong></td>
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<td>4:00pm – 5:30pm</td>
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<tr>
<td><strong>Creating Farmer Networks: A Tool for Supporting Vibrant Farm Communities.</strong> Maud Powell* and Melissa Fery</td>
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<tr>
<td><strong>Putting Your Small Farm to Work - The Business Side of OSU Small Farm Colleges.</strong> L. Tony Nye* and Jeff C. Fisher</td>
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<tr>
<td><strong>Strategies for Supporting Value Chain Development between Small/mid-scale Growers and Large-scale Buyers.</strong> Rebecca Dunning*, Emily Elders, Laura Lauffer and Robyn Stout</td>
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<td><strong>Working with Amish and Other Plain Communities.</strong> Steve Engleking* and Mark Kepler</td>
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<tr>
<th>Track# 4A: Outreach, Training, Research and Risk Management Priorities for Underserved Audiences</th>
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<tr>
<td><strong>SESSION# 1 (LEVEL 2; SUITE 4C)</strong></td>
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<tr>
<td>8:00am - 9:30am</td>
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<tr>
<td><strong>Training and Research Opportunities for Undergraduates in Agricultural Biotechnology.</strong> Sarwan Dhir</td>
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<tr>
<td><strong>Extension Programming for Small and Part-time Farmers.</strong> Lynn F. Kime* and Jayson K. Harper</td>
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<tr>
<td><strong>Beginning Farmers and Ranchers 2.0: Scaling up to Profitability.</strong> Cindy Fake*, Roger Ingram, James Muck and Daniel Macon</td>
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<tr>
<td><strong>Challenges and Outreach Strategies to Working with Underserved Populations.</strong> Duncan M. Chembezi* and E’licia L. Chaverest</td>
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<tr>
<td><strong>SESSION# 2 (LEVEL 2; SUITE 4C)</strong></td>
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<tr>
<td>10:30am - 12:00pm</td>
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<tr>
<td><strong>Growing Farms: Successes and Challenges Using an Online Format for Beginning Farmer Education.</strong> Garry Stephenson*, Heidi Noordjik, Maud Powell, Kristin Pool, Lauren Gwin, Amy Garrett, Melissa Fery and Nick Andrews</td>
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<tr>
<td><strong>Farm Beginnings Provides Practical Education for Beginning Farmers.</strong> Gary Lesoing*, William Powers, Wyatt Fraas, and Connie Fisk</td>
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<tr>
<td><strong>Farmland Conservation 2.0: Engaging the Land Trust Community to Protect America’s Working Farms.</strong> Holly Rippon-Butler and Lindsey Lusher Shute</td>
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<tr>
<td><strong>The 2017 Census of Agriculture: What’s in it for me?</strong> Hubert Hamer, Barbara Rater* and Virginia Harris</td>
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<td><strong>SESSION# 3 (LEVEL 2; SUITE 4C)</strong></td>
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<td>1:30pm – 3:00pm</td>
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<tr>
<td><strong>Effective Training &amp; Technical Assistance Resources for Refugee Beginning Farmers.</strong> Hugh Joseph* and Danielle Scherer</td>
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<tr>
<td><strong>Using Smart Phone and Tablet Apps on the Farm.</strong> Inetta Fluharty</td>
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<tr>
<td><strong>Enabling Successful Solutions and Change: Capacity Building for Underserved Farming Populations.</strong> Jennifer E. Taylor</td>
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<tr>
<td><strong>The Land Stewardship Fair: Engaging Rural Youth in Sustainability.</strong> Kathryn Cole*, Ruth Ross and Katie Trozzo</td>
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<tr>
<td><strong>SESSION# 4 (LEVEL 2; SUITE 4C)</strong></td>
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<tr>
<td>4:00pm – 5:30pm</td>
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<tr>
<td><strong>Farm Answers: A Resource to Help Small and Beginning Farmers Succeed.</strong> Kevin Klair</td>
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<tr>
<td><strong>Building Capacity for Beginning Farmer Start-up and Sustainability across Virginia: A Collective Impact Approach.</strong> Kim Niewolny*, Lorian MacAuley, Thomas Archibald, Natalie Cook and Allyssa Mark</td>
</tr>
<tr>
<td><strong>Choosing the Right Tool for the Job at Hand: A Review of Business Planning and Business Model Development Approaches for Farm &amp; Food Enterprises.</strong> Dave Larnie, Gary Matteson, Stanley Green and Diana Vossbrinck</td>
</tr>
<tr>
<td><strong>Assessment of the Causes of Risk Management Gaps on Small Farms and Ranches: The Case of Selected Small Farmers in Mississippi, Alabama and Florida.</strong> Samuel Scott, Keith Mitchell, Sadeeka Scott and Rachel Talsko</td>
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</table>
### Track# 4B: Outreach, Training, Research and Risk Management Priorities for Underserved Audiences

#### SESSION# 1 (LEVEL 2; SUITE 4D)

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<th>Time</th>
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<tr>
<td>8:00am - 9:30am</td>
<td><strong>Developing Personal Risk Management Plans for Limited Resource Farmers.</strong> Laurence Crane*, Albert Essel, Nelson Brownlee, James Hartsfield and Edde Adobdjan</td>
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<td><strong>Agricultural and Natural Resource Challenges on the Hopi Reservation: Results of a Needs Assessment.</strong> Loretta Singletary*, Staci Emm, Trent Teegerstrom and Matt Livingston</td>
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<tr>
<td></td>
<td><strong>Outreach, Training and Education to Develop Business Skills for New, Beginning and Traditionally Underserved Agricultural Producers.</strong> Nelson Daniels, Vidal Saenz, Alfred L. Parks, Billy Lawton and Oluwagbemiga Ojumu</td>
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<td><strong>Addressing inequitable participation of Socially Disadvantage Farmers in USDA program: Survey Result.</strong> Oluwarotimi Odeh*, Fidelis Okpebholo and Yapo G. N’Guessan</td>
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<tr>
<td>10:30 am - 12:00 pm</td>
<td><strong>Growing New Farmers: Building Effective Training for Beginning Farmers.</strong> Sarah Sohn* and Aleya Fraser</td>
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<td><strong>Get off your Bum and Grow: Encouraging Engagement in Youth Gardening Programs.</strong> Tabitha Surface*, Jenny Totten and Nikki Erwin</td>
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<td><strong>Production Space Design for the Smallest Farmers: Engaging Children in Agriculture at Any Age</strong> Valerie Bandell* and Jenny Totten</td>
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<td><strong>PACA-A Tool For Growers.</strong> Basil Coale</td>
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<tr>
<td>1:30 pm – 3:00 pm</td>
<td><strong>Working with Refugees in Community Gardens.</strong> Wayne Long</td>
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<td><strong>Tax Planning: Defining Corporate Structure.</strong> Darrell Tennie</td>
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<td><strong>Using Business Organizations to Limit Risk and Plan for the Future.</strong> Sarah Everhart</td>
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<td><strong>Electronic Newsletters that Clients Actually Read.</strong> Donna Coffin</td>
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<td><strong>Using Smart Phone and Tablet Apps on the Farm.</strong> Inetta Fluharty</td>
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### Track# 5: Marketing Opportunities and Challenges for Small Farmers and Ranchers

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<tr>
<td>8:00am - 9:30am</td>
<td><strong>Assessing the Economic Impacts of Local Food Systems: A Toolkit and Meta-Analysis to Evaluate Ongoing and Future Efforts.</strong> Becca Jablonski*, Dawn Thilmann McFadden and Debra Tropp</td>
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<td><strong>Increasing Small Farm Access to Retail Markets: Opportunities and Challenges in the Intermountain West.</strong> Colette DePheps*, Soren Newman and Cinda Williams</td>
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<td><strong>Determinants of Small Farm Profitability: How Important are Local Foods?</strong> Stephen Vogel*, Becca Jablonski and Todd Schmit</td>
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<td><strong>Linking Consumers to Small-Scale Meat Goat Producers.</strong> Enefiok Ekanem*, Mary Mafuyai, Fisseha Tegegne, Prabodh Illukpitiya and Hiren Bhavsar</td>
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<tr>
<td>10:30 am - 12:00 pm</td>
<td><strong>Lulus Local Food: Connecting Producers to Retail Consumers.</strong> Molly W. Harris* and Chris Cook</td>
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<td><strong>Why Cooperatives are the Best Tool for Low-Income Communities to Work Their Way Out of Poverty.</strong> John Zippert</td>
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<td><strong>Opportunities and Challenges Facing Agritourism Operators in California.</strong> Shermain Hardesty* and Penny Leff</td>
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<td><strong>Economic Outcomes and Viability of Agritourism Operations in Colorado and California.</strong> Martha Sullins and Shermain Hardesty</td>
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</table>
Track# 5: Marketing Opportunities and Challenges for Small Farmers and Ranchers, continued

SESSION# 3 (LEVEL 2; SUITE 4A&B)
1:30pm – 3:00pm

How Federal Marketing Orders and Marketing Agreements Can Help Your Business. Michael Durando
Post-Harvest Education for the Small Farmer. Robin Turner*, Melissa Stewart and John Bombardiere
Beyond Fresh and Direct: Exploring Specialty Food Market Opportunities for Small and Medium-sized Farms. Larry Lev*, Robert P. King, Jan Joannides, Shermain Hardesty and Gail Feenstra

SESSION# 4 (LEVEL 2; SUITE 4A&B)
4:00pm – 5:30pm

Increasing Farmer Self-Confidence in Direct Marketing Outlets through Experiential Learning Activities. Theresa Nartea* and Michelle Mosely
Marketing Alternative Agriculture Commodities. Helen Brooks
Rural Development’s Rural Business-Cooperative Service. Michelle Wert
Linking Multifunctional Agri-enterprise Development to Small Farm Opportunities. Kathleen Liang

Track# 6: Innovation in Collaborations and Networking for Small Farm Program Development, Research, and Evaluation

 SESSION# 1 (LEVEL 2; SUITE 2C&D)
8:00am - 9:30am

Advancing Equity in the Next Farm Bill - Linking Agriculture and Food to Community Food Sovereignty. Lorette Picciano*, John Zippert and Savi Horne
The Fauquier Education Farm, A Highly Successful Public/Private Partnership. Jim Hankins
Electronic Newsletters that Clients Actually Read. Donna Coffin

SESSION# 2 (LEVEL 2; SUITE 2C&D)
10:30am - 12:00 pm

Cultivating Success™ Idaho: A Collaborative, Multi-dimensional Approach to “Growing” A New Crop of Small Acreage Sustainable Farmers and Ranchers Statewide. Ariel Agenbroad*, Iris Mayes, Cinda Williams and Colette DePhelps, University of Idaho
Learning off the Land: Developing Collaborative Farm Internships for Washington State. Kellie Henwood* and Laura R. Lewis
The Niche Meat Processor Assistance Network: A Collaborative, Value-Chain Approach to Local Food. Lauren Gwin

SESSION# 3 (LEVEL 2; SUITE 2C&D)
1:30pm – 3:00pm

Patriot Guardens. Melissa Stewart
Enabling Networking with Economic Developers and Planners with a Local Farm and Food Profile. Noah Ranells, Laura Laufer*, Enoch Sarku
Tricks of the Visual Delivery Trade: Bringing Expertise to the Small Farmer with One Click. Priya Jaishanker* and John Munsell
The Beginning Farmer Resource Network of Maine. Tori Lee Jackson
### Track 6: Innovation in Collaborations and Networking for Small Farm Program Development, Research, and Evaluation, continued

**SESSION 4 (LEVEL 2; SUITE 2C&D)**

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<td>4:00pm – 5:30pm</td>
<td><strong>High Value/Specialty Crops &amp; Innovative Production Systems</strong></td>
<td>Ramiro E Lobo*, John P. Hewlett and Jose Fernandez de Soto</td>
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<td><strong>A Cohort-Based Approach to Supporting Farmers in Measuring Costs, Making Informed Business Decisions, and Enhancing Farm Viability</strong></td>
<td>Tanya Murray</td>
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<td><strong>From Barley to Drink: A Guide to Farm Based Breweries and Distilleries</strong></td>
<td>James Matson, Julia Schlosser, Jessica Shaw and Chris Cook</td>
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### Track 7: The Role of Small Farmers and Ranchers in Addressing Food Security and Food Deserts; Agroecology and Design of Climate Change-Resilient Farming Systems

**SESSION 1 (LEVEL 2; SUITE 3E&D)**

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<tr>
<td>8:00 am - 9:30am</td>
<td><strong>Local Food System Development: A Viable Economic Development Option for Distressed Areas</strong></td>
<td>Cary Junior</td>
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<td><strong>Small Farmers, Risk Management and Navigating the Local Food Economy</strong></td>
<td>Annette Hiatt</td>
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<td><strong>Is it really a Food Desert: An Investigation of Food Access in Petersburg Virginia</strong></td>
<td>Marcus M. Comer</td>
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**SESSION 2 (LEVEL 2; SUITE 3E&D)**

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<tr>
<td>10:30 am - 12:00pm</td>
<td><strong>Removal of Nitrogen and Phosphorus from Agricultural and Municipal Wastewaters</strong></td>
<td>A. Atalay*, O. Oyewole and B. Whitehead</td>
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<td><strong>Small Farms, Sustainability and Environment: Current and Future Outlook</strong></td>
<td>Ali Mohamed, Srinivasa Rao Mentreddy* and Denis Ebodaghe</td>
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<td><strong>The Dry Farming Collaborative: Growing without Irrigation in the Maritime Pacific Northwest</strong></td>
<td>Amy Garrett*, Heidi Noordijk and Dana Kristal</td>
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<td><strong>Increasing Agroforestry based Ecosystem Services and Farm Productivity of Marginal Farmers through Intercropping of Loblolly Pine and Switchgrass</strong></td>
<td>Anand Kumar* and Solomon Haile</td>
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**SESSION 3 (LEVEL 2; SUITE 3E&D)**

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<tr>
<td>1:30pm – 3:00pm</td>
<td><strong>Enjoying the Essence of Regenerative Agriculture</strong></td>
<td>Ngowari Jaja</td>
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<td><strong>Improving and Protecting Soils, Building Your Farm, and Sequestering Carbon with Value-Added Biomass Products</strong></td>
<td>Harry Groot*, Katie Femholz and Scott Bagley</td>
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<td><strong>The Scientific Justification of Companion Planting</strong></td>
<td>Justin Duncan</td>
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<td><strong>Shade Effects on Forage Nutritive Value and Ergot Alkaloid Concentrations: Implications for Silvopasture Use</strong></td>
<td>Kelly Mercier*, Chris Teutsch, John Fike, John Munsell and Gregory Frey</td>
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**SESSION 4 (LEVEL 2; SUITE 3E&D)**

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<td>4:00pm – 5:30pm</td>
<td><strong>The Organic Germplasm Consortium: Preserving and Developing Plant Genetic Resources that Advance Agricultural Diversity and Resiliency</strong></td>
<td>Laura R. Lewis* and Micaela Colley</td>
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<td><strong>Sorghum: A Low-Input Alternative Crop for Small Farms</strong></td>
<td>Maru Kering*, Laban Rutto and Vitalis Temu</td>
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<td><strong>Growth and Yield Response of Eragrostis Tef to Mid- and Late-Season Harvest Regimes</strong></td>
<td>Vitalis Temu*, Ariel Coleman and Maru Kering</td>
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<td><strong>Addressing Climate Challenges with Conservation and Other Innovations</strong></td>
<td>Willard Tillman*, Chukou Thao, and Lorette Picciano</td>
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Oral Presentations

TRACK 1
SESSION 1 (LEVEL 2; SUITE 2A)

Virginia State University 43560 Project
Susan Cheek and Fidelis Okpebhoro (Virginia State University); Clifton Slade (Slade Farms)

In an effort to maximize production and profits for small, limited resource, urban, and beginning farmers, Virginia State University Small Farm Program conducted a farm demonstration project (43560 Project) in 2013, with a goal of grossing at least one dollar worth of produce per square foot on an acre of land (43,560 sq ft.). The project was necessitated to improve profits for farmers, especially farmers with minimal acreage.

Using both organic and conventional production methods, simple tools, and drip irrigation technology, a variety of high value small fruits, flowers, and vegetables were cultivated on 100 x 5 ft. beds, with a tractor-wheel width between each bed. Each bed has between two and six rows of crops. The plot was maintained with intensive labor throughout the project period. Records of labor and other inputs were kept and analyzed. Samples of harvested produce were weighed, valued, and test-marketed through various marketing channels, with a major portion donated to the local food pantries.

Results at the end of the project indicated that produce with gross worth over $43,560 was produced in the acre of land just from one production period, and it is possible to produce more than once in an acre, using the same methods, during the production year. Virginia State University conducts this project every year since 2013, as tool for training and providing experiential learning for Virginia’s small farmers. Producers are fast adopting and replicating the project for an increased profitability per acre.

Trees and Livestock Together: Silvopasture Research and Application for Virginia Farms
Gregory E. Frey (USDA Forest Service, Southern Research Station); John H. Fike and Christopher D. Teutsch (Department of Crop & Soil Environmental Sciences, Virginia Tech); J.B. Daniel (USDA Natural Resources Conservation Service); Timothy A. Mize and Adam K. Downing (Virginia Cooperative Extension); John F. Munsell (Department of Crop & Soil Environmental Sciences, Virginia Tech)

Silvopasture is the intentional combination of trees, forage, and livestock on a parcel of land to maximize multiple outputs and has been shown to have benefits in various parts of the world. There is a great deal of interest in silvopasture in Virginia and the US South (Workman et al. 2004), possibly driven by (1) the search for alternatives to streamside areas to reduce heat stress on livestock, (2) hot and dry summers, (3) interest in local sustainable agricultural systems. However, silvopasture practices have not been adopted or studied widely in Virginia or surrounding states, and lack of familiarity and information is a key hurdle to adoption. Potential adopters need research in order to make good establishment and management decisions, but researchers typically need a reasonable pool of adopters to justify the expense of research studies. Still, a team of scientists in Virginia and neighboring states has pooled resources to move forward with research on establishment methods, biophysical interactions, economics, and perceptions of stakeholders.

One small research site began in western Virginia in 1995, but since 2012, the effort has expanded to include new research and extension sites in other parts of the state, outreach and support to farmers interested in establishing parcels on their land, and training and surveying of technical service providers. We will present preliminary results and practical considerations gleaned from these early activities.

Strategies to Enhance the Sustainability of Small-Scale Goat Production
Uma Karki (Tuskegee University)

Majority of the goat producers in the USA are small-scale farmers. The sustainability of these farms is becoming more and more challenging with the changing scenarios, such as increasing globalized market competition, growing global population and food demand, and changing climate with more extreme weather conditions. To remain sustainable, the small farms need to be more efficient, productive, environmentally sound, and socially appealing. There are several strategies that can be helpful in making small-scale goat operations sustainable: 1) lowering the costs of production by improving pastures and grazing systems, 2) selecting suitable breeds to match with the management conditions and market demand, 3) developing necessary facilities and management approach to minimize disease and parasite problems, 4) keeping records, doing basic economic analysis and business planning, 5) diversifying farm commodities, 6) involving young generation in the farm, 7) approaching and getting possible supports from NRCS, USDA, and other possible sources, 8) developing the required size to meet the economic expectation, 9) exploring and implementing the best marketing strategies, and 10) getting continuous education. All these concepts and strategies will be discussed in more detail during the presentation.

Overcoming the Obstacles of Non-timber Forest Products as a Small Farm Diversification Avenue
Katie Trozzo and John Munsell (Virginia Tech)

Diversification of farm enterprises is not new to small farmers as a way to improve farm profitability. Though, seldom do they look at their forest for new avenues of diversification beyond cutting timber. Non-timber forest products (NTFPs), or products excluding timber intentionally grown or stewarded from or among trees such as woodland medicinals, mushrooms, fruits, nuts, and berries, have great and relatively unexplored potential to contribute to small farm profitability. However, they often have greater complexity associated with production and marketing than traditional agricultural crops. Farmers may need more complex and nuanced ways of working together and leveraging existing resources within the community to overcome obstacles related to these products. We conducted over
Using Row Covers to Improve Sustainability of Vegetable Crop Farmers in Temperate and Tropical Climates

Ramon A. Arancibia (Eastern Shore AREC, Virginia Tech)

Row covers (low tunnels) have been used successfully in protected production systems to modify the crop micro-environment early in the spring and protect against cold temperatures and light freezes in temperate climates. This is particularly beneficial for warm season crops such as peppers and cucurbits because warmer temperatures favor growth; however, row covers can be used for additional purposes in summer and fall/winter, and in tropical areas where temperature is not a problem, to improve sustainability of specialty crop farmers. Protection against wind, reduced evapotranspiration and stress, and physical barrier against insects and disease transmitted by insects are additional benefits of using row covers that may result in increased productivity and sustainability of farmers. An additional benefit of row covers that has been overlooked is the role on plant-water relationships. Maximum radiation and photosynthetically active radiation (PAR) took place however, has not been tested in North Carolina. The objective of this project was to characterize high tunnel microclimate in zone 7&8 of North Carolina. Spectrum® data loggers were placed in high tunnels located in Greensboro (zone 7) and Goldsboro (zone 8) in fall, winter and spring of 2014&2015. Measurements of air temperature and humidity, soil temperature and humidity, leaf wetness, solar radiation and photosynthetically active radiation (PAR) took place every 30 minutes in vegetable and strawberry high tunnels. The high

Characterizing High Tunnel Microclimate in Hardiness Zone Seven and Eight of North Carolina

Sanjun Gu, John E. Beck and Joseph A. Moore (North Carolina A&T State University)

High tunnels are proven profitable season extension tools for small farmers. This low-tech, low-cost structure with one layer of plastic will advance one hardiness zone in the Midwest. This protection, however, has not been tested in North Carolina. The objective of this project was to characterize high tunnel microclimate in zone 7&8 of North Carolina. Spectrum® data loggers were placed in high tunnels located in Greensboro (zone 7) and Goldsboro (zone 8) in fall, winter and spring of 2014&2015. Measurements of air temperature and humidity, soil temperature and humidity, leaf wetness, solar radiation and photosynthetically active radiation (PAR) took place every 30 minutes in vegetable and strawberry high tunnels. The high
tunnels had 2-layer of polyethylene films in Goldsboro and one-layer in Greensboro. Results indicate that a protection of two hardiness zones was true in strawberry tunnels with row covers, and a protection of one zone occurred without row covers in the vegetable tunnels. High tunnels delayed the last spring or first fall frost by three to four weeks. Growing degree days at 50°F was 46% higher in tunnels. Soil temperatures rarely went below 40°F in high tunnels. A single-layer plastic lowered solar radiation and PAR by 28% and 37%, and 2-layer plastic reduced them by 50%. Air humidity was higher in the tunnels than in the field. A 30-minute ventilation is recommended even in winter. Leaf wetness was lower in high tunnels, however, row covers touching leaves could increase leaf wetness significantly, thus encouraging foliage disease incidence.

**TRACK 1**

**SESSION 3 (LEVEL 2; SUITE 2A)**

Niche Markets for High Tunnel Production

*Susan Hill (Hill Farm Vintage Vegetables)*

High tunnel production lends itself nicely to reaching niche markets. This presentation discusses exploring possible markets such as ethnic restaurants and outdoor venues. The talk also discusses crop selection for season extension and marketing.

Educating Small Farmers, Workshops to Help You Get Started

*Cynthia Rice, Buddhi Gyawali, Marion Simon, Louie Rivers Jr. and Bijesh Mishra (Kentucky State University)*

Exploration of alternative methods of farm production to allow small socially disadvantaged producers to compete with larger conventional farms. Ideas of organic, sustainable, bio-intensive, silvopasture, inter-cropping and other methods such as no-till and low till are new concepts which are not necessarily something a large farm can implement but a small farm can implement and use these methods as a selling point for their financial growth. Development of apps to educate, train, and connect with others (farmers, wholesalers, value added resellers, retailers, etc.) allows farmers to explore options which may increase their brand and marketability.

Healthy Food in the City: Urban Farms in RVA

*Matthew Jones (NRCS VA District Conservationist); Suzanne Pender (USDA Natural Resources Conservation Service); Sally G. Schwitters (Tricycle Gardens)*

Learn about how NRCS is helping Tricycle Gardens with high tunnels and conservation-focused farming in Richmond, VA’s food deserts. Tricycle Gardens manages multiple urban agriculture sites across the Richmond region with the mission to grow healthy food, healthy communities, and a healthy local food system. These farms feature sustainably grown vegetable crops in fields and in hoop houses, compost & vermicompost operations, insectary plants, water catchment systems, experimental bed designs, perennial plants such as herbs and fruit trees and more.

The Promise of Urban Agriculture: Policies and Planning in Support of Commercial Urban Farms

*Anu Rangarajan and Molly Riordan (Cornell University Small Farms Program)*

As urban and suburban farms have proliferated around the United States in the past decades, much attention has been paid to their youth engagement, community development, educational and other social impacts. Yet there have been few assessments of how these farm-based social enterprises, which face the narrow margins and high risks of growing produce, can thrive based on the sales of their products alone. Often strong relationships with nonprofit and philanthropic sources have helped urban farms survive. But what can be done to encourage their self-sufficiency for a promising future?

Through a study commissioned by the Local Food Research & Development Division of USDA Agricultural Marketing Service, we have interviewed farmers, policy-makers, urban planners, funders, and nonprofit and community organizers engaged in local food systems and urban farming to uncover the policies, resources, and future research and development needed to support the development of urban farms. We will review examples from case study farms to present relevant farm models, planning policies, and partnerships that point the way toward fulfilling the promise of urban agriculture.

**TRACK 1**

**SESSION 4 (LEVEL 2; SUITE 2A)**

Growing Small Fruits in Urban West Virginia

*Brad Cochran (West Virginia State University)*

Small fruits are a staple for people who have grown up in Appalachia. Whether they picked blackberries and raspberries with their parents or grandparents during hot summers as a child or they have been growing strawberries or tree fruits in the garden and yard, West Virginians can relate to the idea of small fruits being included in their diet. As urban sprawl takes place in West Virginia, particularly in the Kanawha Valley (Charleston-Huntington), many people have taken an interest in growing “tame” berries in these urban and suburban areas that continue to grow. West Virginia State University Extension Service has assisted many homeowners, non-profits and others get started with urban small fruit orchards and learning valuable skills in regards to pruning and maintenance of their small fruits. These orchards have been set up in various ways from a private homeowner producing fruit for their home and family or for small-scale sales, as well as being set up in a manner similar to community gardens where the fruits produced are available to community members. As urban agriculture becomes more and more popular and accepted in West Virginia, the amount of small fruits being produced in these urban areas will only continue to grow. By being at the forefront of this movement, WVSU Extension Service has been able to educate and assist these homeowners and groups to ensure they are starting out in a manner that they can be successful.
ORAL PRESENTATIONS

Sustainable and Urban Agriculture Program (SUAP) at Virginia State University
Leonard Githinji (Virginia State University)

Food deserts are defined as low-income neighborhoods where a substantial number of residents has low access to a supermarket or large grocery store. They are also defined as areas with limited access to affordable and nutritious food. In Virginia, a high percentage (>17%) of population live in food deserts and hence it is imperative to mitigate the situation by increasing urban food production. To accomplish that, urban dwellers should receive continuous education on various techniques of food production that includes hands-on training. Virginia State University has an established program that offers comprehensive urban agriculture education across the state that targets gardeners, urban farmers, and extension educators. The program is engaged in conducting regular workshops, field days, and hands-on training on various urban agriculture topics, as well as developing and disseminating educational resources. The short-term outcomes for FY 2015-2016 includes ≥ 200 individuals receiving awareness; ≥ 100 individuals receiving in-class training; and ≥ 20 individuals receiving hands-on training in urban agriculture. The medium-term outcomes includes ≥ 40 individuals changing behavior towards urban agriculture; ≥ 35 individuals making decisions to start urban agriculture projects; 5 faith or community based organizations starting community gardens; and 3 schools establishing school gardens. The expected long-term outcome is ≥ 25% increase in fruits and vegetable production; ≥ 20% reduction in cost of fruits and vegetables; ≥ 15 increase in local incomes; ≥ 10% increase in urban food security; and ≥ 10% reduction in Food Deserts in Virginia.

How Much Urban Agriculture is There?
Linda J. Young and Barbara Rater (USDA National Agricultural Statistics Service)

USDA’s National Agricultural Statistics Service (NASS) has the responsibility of quantifying the nation’s agricultural production. Historically it has focused on large, production agriculture. With increased interest and activity in the urban areas, NASS has begun exploring how to better quantify urban agriculture. This segment of agriculture is particularly challenging to measure because the agricultural holdings tend to be small, widely dispersed, and more transient than the predominantly large farms in rural areas. In collaboration with the Multi-Agency Collaboration Environment (MACE), a new approach to list building was explored in a pilot study conducted in the City of Baltimore. Using a big data approach, operations were identified by gathering information (state and local permits, facebook and twitter feeds, interest groups, etc.) via the web. A sample was drawn from the list, and an in-person survey was conducted to assess whether or not the identified areas were producing agriculture. In addition, a draft form for collecting production information was used. The lessons learned from the study and next steps are discussed in this presentation.

The 31st Street Baptist Church Farmers’ Market Story
Dr Morris Henderson (31st Street Baptist Church)

In 1990 after R-CAP had to close the doors of the East End Soup Kitchen, the pastor and people of 31st Street Baptist Church decided to open the church doors up to a ministry of feeding the homeless and hungry of the East End community.

We began by asking church members to bring can goods from home. Later we were able to forge a relationship with the United States Department of Agriculture to get commodities delivered to support our efforts.

In 2009, the vision of establishing a community garden led to the founding of The Darrel Rollins Memorial Community Gardens, which represents a collective dream of eradicating food deserts in the City of Richmond.

Today, with our partners at Virginia State University, Tricycle Gardens and Bon Secours, the effort of many hands growing fresh, locally-grown produce, promotes shared community health, well-being, and economic vitality.

Now with our new partners at the USDA- NRCS/FSA/FNS, we are entering a new phase of service and becoming a model for Urban Agriculture in the Commonwealth of Virginia and beyond. We have become the first Urban Church with a farm serial number with USDA.

With the construction of the high tunnel house we are extending our growing season to be year round and changing our status from community garden to Urban Farm and added a farmers market offering fresh fruits and vegetables.

TRACK 2

SESSION 1 (LEVEL 2; SUITE 2B)

Feral Swine Outreach Activities for Limited Resource Farmers and Ranchers in Texas
Derrick Banks*, Corey Hicks, Billy C. Lawton, Alfred L. Parks, Nelson T. Daniels (Prairie View A&M University Cooperative Extension)

The aim of this project is to respond to a great need and opportunity that addresses an urgent problem in the U.S. Agricultural system, which is the proliferation of the feral swine population and the destruction that they are causing. Feral swine damage is an ongoing and increasing issue among agricultural producers and landowners. They are causing tremendous economic damage to the economy, with estimates as high as $4 billion annually. This project is a joint effort with the APHIS National Feral Swine Damage Management Program being conducted with the 1890 Universities. Additionally, it is collaborative effort with other Agencies- such as Texas AgriLife Extension, The Texas Department of Agriculture, The Texas Parks and Wildlife Department, and two CBO/NGO Organizations.

The objective of this project is to develop an integrated Outreach and Educational Intervention approach to address this problem.
Production and Marketing of Turmeric as a Niche Crop for Small Farmers,
Reza Rafie (Virginia State University)

Turmeric is the rhizome of Curcuma longa, an herbaceous perennial plant belonging to the family Zingiberaceae and a native of South Asia particularly India. The plant is propagated vegetatively from rhizomes. Turmeric is considered a tropical plant and it requires a growing season between 8-10 months before harvesting. Therefore, it needs to be grown under high tunnel conditions in the temperate zone. In recent years, systematic research has revealed a wide range of pharmacological applications for C. longa due to the active compounds extracted from its rhizomes called curcuminoids. These compounds have been shown to have many health benefits. Therefore, consumer demand in the United States for freshly grown turmeric has increased considerably. In 2011, Virginia State University initiated production and test marketing of turmeric. Currently, production assistance is provided to 25 small turmeric growers in the Commonwealth of Virginia. Results from an unreplicated study in 2015 showed an average yield of four pounds per plant when grown under high tunnel conditions. In 2015, the average price for fresh turmeric sold at local farmers markets was $11.00 per pound.

Optimizing Nitrogen Management on Organic and Biologically-Intensive Farms
Douglas Collins, Andy Bary and Tuong Vu (Washington State University)

Organic farmers face a difficult problem in managing nitrogen: the magnitude and timing of nitrogen mineralization from organic matter cannot be easily predicted. Soil texture and management history both influence soil N-mineralization potential. Well-managed plant-soil systems are tightly coupled; they are balanced in terms of nitrogen availability and nitrogen uptake. Uncertainty about nitrogen fertility can lead to N deficient or N saturated systems caused by excessive and insufficient fertilizer applications. Too little fertilizer compromises yield and profit while over-application leaves nitrate in the soil that is prone to leaching during winter and poses a threat to water quality.

This session will integrate grower experiences with results from an on-going on-farm research study with 5 organic vegetable producers across Washington State. Nitrogen contribution from organic matter and the economic benefit of five different rates of fertilizer application is being assessed on 5 organic farms over 2 years with broccoli as the crop. Through this participatory research we will be able to place dollar values on the importance of optimizing soil fertility. Growers will be able to more accurately estimate nitrogen mineralization from soil organic matter and adjust fertilizer applications up or down accordingly.

Growing Local Sustainable and Organic Farming Systems
Jennifer Taylor (Florida Agricultural & Mechanical University)

The demand for organic products and healthy food has grown. The Organic Farming Research Foundation has suggested that the organic sector grew from $3.2 billion in 2008 to $5.5 billion in 2014. There are nearly 20,000 certified organic farm operations in the United States (with about 27,000 certified organic operations operating around the world). A recent USDA Census suggested that there are 522,000+ farms operated by beginning farmers with less than 10 years of experience; another suggested that about 91% of all farms in the United States are small farms. The critical role that small farmers hold in their local and global communities as sustainable food providers is pivotal to local healthy sustainable food resources and food security. Agroecology organic farming practices are foundational to building sustainable climate resistant local and global food systems.

This session will discuss our development and implementation of a value-added learning paradigm that focuses on participatory strategies to equip and build the capacity of local small farms and sustainable organic agriculture for local good food.

TRACK 2
SESSION 2 (LEVEL 2; SUITE 2B)

Extension of Local Food Production in Idaho Using High Tunnel Technology
Jennifer Jensen, Ariel Agenbroad, Tony McCammon and Steve Love (University of Idaho Extension)

This presentation will report on three case studies of farmers involved in a season extension research project where high tunnels were used to enhance production through length of growing season and diversity of crops.

One of the goals of this project is to increase knowledge and skills needed to effectively use high-tunnels. Along with other objectives, this project aimed to research to identify superior crops and crop cultivars for use in Idaho high tunnel production.

The project engaged three Idaho producers in geographically and climatically diverse regions in research and field trials using high tunnels for season extension of horticultural crops. The team evaluated crops identified by producers to be of significant economic potential as new or year-round enterprises. The project started
in 2013 with crop data (crop value and monetary return) being collected in 2014, 2015 and 2016.

Three farmers trialed different crops at each of their high tunnels, working the high tunnels into their existing farms. One grower compared the high tunnel structure with her use of smaller hoop houses and black plastic. Another grower utilized the high tunnel to grow hot peppers that would not otherwise have matured without season extension. The third farmer evaluated high-value medicinal and homeopathic plants.

Outcomes from this project include two farmers who have been able to produce crops that otherwise would not have been productive in their regions. The other grower has been able to determine which crops grow better in the high tunnel as compared to other season extension techniques.

Reinventing the Wheel: A New Paradigm of Technical Services
Karen R.M. McSwain (Carolina Farm Stewardship Association)

Carolina Farm Stewardship Association has developed a new paradigm for providing farmers the technical information they need to be successful. Through our Farm Services and Food Systems teams, and incubator farm, we offer multi-faceted technical services to meet the diverse needs of small farmers. Our unique approach includes workshops, online resources, one-on-one consulting services, research, and access to land and equipment for individuals interested in starting their own farm at the Elma C. Lomax Farm, the only certified organic incubator farm in the Southeast. Since 2011, through our Organic Transition Initiative and Local Produce Safety Initiative we have provided training to over 1,500 workshop participants, one-on-one consulting to 160 farmers, and allocated $30,475 in cost share funding, which has led to a 57% increase in the number of certified organic farms and a 168% increase in GAP certified farms in the Carolinas. Our new Seasonal High Tunnel Initiative will provide technical information to farmers struggling to overcome the obstacles of producing in seasonal high tunnels by offering workshops, one-on-one consulting, online resource guides, and high tunnel research results. Our Food Systems work has helped launch Eastern Carolina Organics, an independent, farmer-owned LLC that markets Carolina organic produce, Carolina Ground, North Carolina’s first LC3 that works with farmers and bakers to supply high-quality, stone-ground, Carolina-grown organic bread flour and the Cobblestone Farmers Markets, a sustainable growers-only farmers market. This presentation will provide an overview these programs and the partnerships necessary to ensure their success.

Principles Guiding Practice: A Case Study Analysis of the Principles of Sustainable Agriculture for Diverse Farms
Marilyn E. Swisher, Kelly N. Moore, Christine Kelly-Begazo and Kaylene Sattanno (University of Florida)

Early proponents of sustainable agriculture faced considerable resistance and a long-lasting discussion of what constitutes sustainable agriculture ensued. This controversy has re-emerged recently in the discussion of agro-ecology and sustainable intensification as strategies for sustainable agriculture. Fourteen agricultural professionals participated in a guided discovery learning process on seven agricultural operations that many in Florida consider good examples of sustainability. The seven operations included large and small farms, organic and conventional, livestock and crop enterprises, and traditional and direct sales marketing approaches. The objective of the process was to identify the principles that the operators use to guide their specific management decisions, including decisions with economic, environmental and social consequences. Participants studied information about each operation and created a set of questions to ask the manager(s) about the underlying philosophy and principles that guide the management prior to spending one to six hours on site. The information was analyzed in small groups after the visit, and a summative analysis was completed after all seven sites were visited. Although these operations are very diverse in terms of characteristics like size, enterprise mix, capitalization, technology used, marketing strategies and manager experience, the study showed consistent similarities in the principles that guide their decision-making and nine broad principles of sustainable agriculture were identified. Most of the contemporary theoretical concepts about social, economic and environmental sustainability are reflected in the operating principles of these businesses.

The Benefits and Challenges of Machinery Sharing Among Small-scale Fruit and Vegetable Growers
Linda Naeve and Georgeanne Artz (Iowa State University)

The demand for local foods is increasing around the country. However, to meet the volume needs of wholesale, in-direct fresh markets, most producers will need to scale up their production. Local food producers are often small-scale, less mechanized, and more labor intensive than large-scale commercial fruit and vegetable production. In many cases, expansion using labor intensive practices is limited because additional labor is unavailable or too costly. Like row crop producers, commercial fruit and vegetable growers typically use tractors and equipment for soil preparation. However, the larger fruit and vegetable farming operations also use more diverse and specialized equipment such as transplanters, bed shapers, planters for multiple-sized seed, mulch layers, mulch removers, and root crop diggers. Purchasing machinery, even used machinery, usually requires a significant financial investment and adequate cash flow, making the investment required to scale-up economically infeasible. Machinery sharing has potential to help small-scale fruit and vegetable growers gain access to specialized machinery and improved efficiency in cost-effective ways. Although sharing machinery can make sense for growers considering expanding production, there are some unique challenges that need to be addressed. This presentation will provide an overview of a study of five farmer groups that, under the direction and supervision of the authors, prepared formal sharing agreements and shared various types of equipment. Case studies of the machinery sharing agreements and a summary of the benefits and challenges faced...
by small-scale growers during the first year in machinery sharing arrangements will be discussed.

**TRACK 2**

**SESSION 3 (LEVEL 2; SUITE 2B)**

Sustaining Interest: GAPs Outreach for Small Scale Direct Market Produce Growers

*Meredith V. Melendez (Rutgers Cooperative Extension, Mercer County); Wesley L. Kline (Rutgers Cooperative Extension, Cumberland County)*

Small scale fresh produce growers are often not regulated for food safety, particularly if they are selling the produce through direct market channels and are not processing food. Produce growers, regardless of size of operation and sales methods, need to understand Good Agricultural Practices related to their farming operation. A robust on-farm food safety program was developed in New Jersey to reduce the overall human pathogen risk involved with the production of fresh consumed produce.

Live workshops are the starting point for fresh produce food safety education. Grower participation at these workshops often begins at commodity or region specific meetings. Retail growers who participate in the full day training are provided with a training manual, checklists, sample forms, and sample risk assessments to develop a food safety program specific to their operation. Hands on food safety plan writing is provided, a template plan is used as a starting point. Farm walk throughs are offered once they have a written plan. Communication continues beyond the workshop through the Rutgers Plant and Pest Advisory, an online blog feed. Post workshop surveys are used to develop the following year’s program. On-farm sampling results help to hold audience interest.

Coordination and collaboration with national, state, and local officials along with individual growers, grower associations and commodity groups is essential to building grower trust and participation with the program. This teamwork is essential to the vibrancy of the program and the quality of outreach to support the retail agriculture industry in New Jersey.

Croptime: Scheduling Vegetables Using Degree-Days


Estimates of calendar days to maturity provided in vegetable seed catalogs are not very accurate. Thermal time or degree-day models can more accurately predict crop production schedules. In collaboration with small-scale organic vegetable growers, we have developed the Croptime website. The site hosts variety-specific degree-day models that predict time to vegetable harvest and time to germinable weed seed for important vegetable varieties and weeds in western Oregon. Four transplanted broccoli variety models and seven cucumber models are online now, and we anticipate launching at least 40 more vegetable variety models by April 2017. New crops include snap beans, cabbage, cauliflower, kale, carrot, parsnip, summer squash, head lettuce, sweet pepper, tomato, spinach and sweet corn. These models may help growers more accurately predict harvest schedules at different times of the year, and in years with unusual or extreme weather. The hairy nightshade, lambsquarter and redroot pigweed models online now may help growers predict when these weeds will produce germinable seed. We are also developing thermally sensitive N cycling information to support organic nutrient management decisions, which will also be online by 2017. In addition, we are working with seed companies and undergraduate classes to enhance adoption of degree-day models and share data collection efforts. Croptime models are readily available to other University agricultural phenology systems.

Success Beyond the Workshop: Reinforcement with On-Line and Take Home Resources for Estate and Farm Transfer Planning

*Robin G. Brumfield and Meredith V. Melendez (Rutgers Cooperative Extension)*

A recent survey of New Jersey farmers (n=137) showed that almost 75% of respondents expected to pass down their farm to their children, and yet in another survey, only 16% had a transition plan, 40% had written goals, and 50% had wills. How can these expectations possibly be met without ‘breaking the silence’ and planning for the future they prefer?

We developed the Preparing for Later Life Farming program to assist multi-generational New Jersey farm families with education and resources in estate and transition planning with funding from a USDA/NIFA award and Northeast Extension Risk Management Education grant. With additional support from the New Jersey Department of Agriculture and Farm Bureau New Jersey, we developed a dynamic training program to introduce concepts and communication strategies in a traditional setting. We launched the program in 2015 with 65 producers attending one of three consecutive eight-hour workshops held regionally across the state. We provided all program materials to attendees on flash drives and launched the website, http://laterlifefarming.rutgers.edu, to provide on-demand access to presentations and videos as references and to reach a larger audience. Post workshop, six month, and one year follow-up surveys revealed substantial knowledge gains and actions taken by these farm family participants. The website has logged over 200 video views, and survey respondents have requested the workshop be repeated periodically to reinforce what is presented online. Utilizing these communication techniques to educate clientele on estate planning has proven highly successful in getting this important conversation started back at the farm.
Sustainable and Diversified Small-Scale System of Agricultural Enterprises

Sandra Thompson, Lawrence Carter, Trevor Hylton, Linda Sapp, Charles Brasher and Freddie Harris (Florida A&M University)

This applied research and extension system is designed to equip audiences in how to start and manage small acreage for agricultural purposes (income, education, food, therapeutic, and enjoyment) using sustainable practices and diversified methods on three different production platforms. The platforms are homestead plots (orchard and raised beds), stationary flatbed, and mobile recreational vehicle (RV). The principal audiences are (a) new and beginning farmers, (b) 4-H youth and other groups/schools, and festival participants, and (c) various agencies/centers providing supportive and therapeutic treatment services (e.g., substance abuse, homeless, elderly), and social clubs. The objectives are to 1) stimulate interest in small-scale farming; 2) demonstrate agricultural production benefits for varied audiences; 3) show varied types of sustainable practices used in agricultural production; and 4) provide flexible enterprise budgets for adoption. The system rollout is in three phases. Phase I was the 2015 establishment of the stationary flatbed platform with an installed irrigation system, featuring seasonal vegetables, herbs grown in beds and through hydroponics. Phase II 95% complete consists of an orchard and several uniquely designed raised beds of seasonal vegetables, herbs and flowers; irrigation installation end of April 2016. Phase III, 50% complete consists of a newly purchased 2016 RV complete with a kitchen for demonstration cooking; remaining work, retrofit RV with instructional stations to include: hydroponics, live bees in Plexiglas, vermiculture, raised beds and a small lab (microscopes and testing equipment for soil and water). The system in its entirety will be launched at CEP’s June 16, 2016 FarmFest.

Locally Grown Food in the U.S.: Collection of Agricultural Data

Barbara Rater and Linda Young (USDA National Agricultural Statistics Service)

Interest is growing in support of local agricultural economies through the purchase of foods from sources that are geographically close to the consuming areas. Public sector and private sector policy decisions in support of local food systems are driving an intensifying need for data. People increasingly want to know where their food comes from, what’s in it, and who grows it. Locally grown food is fresher, contributes to energy savings because of shorter in-transit times, and supports the local economy. Many local food systems producers are small or medium-sized farms found in rural areas near urban markets. Whether due to lifestyle choices or land and capital constraints, many producers may be hampered from following the traditional path of expanding the size of their farm operations. As a direct response to this new policy push, USDA’s National Agricultural Statistics Service (NASS) conducted a Local Foods Special Study targeted at this emerging trend. The study will help evaluate the manner in which local food systems improve community food security and assist populations with limited access to healthy food. This presentation will highlight the survey process and content.

Food Safety Outreach Program

Dawanna James-Holly (USDA, NIFA-IFSN, Division of Food Safety)

In fiscal year 2015 and 2016, the FDA proposed several major rules to implement the Food Safety Modernization Act (FSMA). These rules will significantly impact growers, small farmers and ranchers by introducing new verification activities across the US and abroad. In this session, the implementation framework designed by USDA-NIFA in partnership with FDA-CFSAN will be introduced to deliver outreach and technical assistance guidance to owners and operators of small to mid-sized farms, beginning farmers, small processors or small fresh fruit and vegetable merchant wholesalers. Attendees will gain an overview of a holistic educational strategy encompassing a national coordination center and 4-large scale regional centers to implement the FSMA rules. In addition, USDA-NIFA’s new Food Safety Outreach competitive grant program will be introduced (https://nifa.usda.gov/food-safety-outreach-program). NIFA is seeking applicants at 3 different funding categories to support small niche farmers and ranchers, community based organizations and multi-state large scale projects in an effort to build, expand and/or leverage best practices. The project aims to reach approximately 44 constituent training approaches across the country.
Nebraska Extension Partners with other Organizations to Provide Educational Opportunities for Beginning Farmers, Educators and Consumers

Kathie Starkweather and Wyatt Fraas (Center for Rural Affairs); Gary Lesoing (University of Nebraska-Lincoln); Jessica Jones (Nebraska Extension); Vaughn Hammond (Orchard Manager)

Nebraska Extension, the Center for Rural Affairs, the Nebraska SARE Program and the Nebraska Sustainable Agriculture Society have partnered together on different educational opportunities to assist people interested in learning more about sustainable farming practices. In 2013 Nebraska Extension and the Center for Rural Affairs conducted six Beginning Farmer Workshops at several locations across the state. Three workshops on value-added beef and three workshops on vegetable production were held. Seventy-three participants learned about production practices and financial management from experienced and successful farmers. During the summer we had two Beginning Farmer Tours in outstate Nebraska. Forty-two participated in these tours that visited value-added and diversified agricultural enterprises.

In 2013 and 2014, Nebraska Extension held three small farm workshops in eastern Nebraska. These workshops had a major emphasis on small scale food production for the farmer and had 108 participants. In a survey for these small farm workshops, n=91, 72% were likely or very likely to grow something new. On two local food systems tours in 2014-15, n=47, participants increased their knowledge of local food systems 63 percent. Other SARE sponsored tours helped Educators learn more about the local food systems in Nebraska and also some consumers participate so they can have more of an awareness of what goes into local food production in Nebraska at different scales. As consumers and educators learn more about the local food systems, they will promote local food and this will help sustain the small local farmers that produce it.

The Farm Service Agency Microloan Program

Michael Moore and Carrie Novak (USDA-Farm Service Agency)

The Farm Service Agency determined prior to 2013 that it needed to develop a loan product that would better serve the unique operating needs of small family farm operations. The intended effect of the rule was to make the operating loan Program more widely available and attractive to small operators through reduced application requirements, more timely application processing, and added flexibility in meeting the managerial ability eligibility requirement. In January of 2013 the Microloan Program was released to the country. In so doing, FSA definitely stepped outside of its comfort zone. Loan officers are skilled in complex loan duties and needed encouragement to implement reduced requirements. This new loan program has exceeded expectations.

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The Making of Agriculture: The Intersection of the Maker Movement and Modern Small-Scale Agriculture and How Extension Professionals Can Encourage Both

Jennifer D. Totten (West Virginia State University Extension); David Francis (Utah State University Extension)

It’s no secret: we need more farmers in the United States. With the average age of the farmer encroaching on 60 years of age, this has become more and more important. Additionally, very few people wake up at the age of 30 and decide to farm, so it is imperative that agriculture as a career choice is presented early. It has fallen on extension in many states to create and encourage new and beginning farmers from the ground up.

This presentation will focus on the intersection of the maker movement and beginning farming and how extension personnel can encourage both aspects. Utah State University Extension has been developing and using maker curriculum for 4 years with Preschool to 12th graders and Junior Master Gardener programming as well. West Virginia State University Extension has been working with JMG for 12 years to encourage new farmers and has recently delved into the world of maker programming.

Through this process, both universities have worked to develop a new breed of farmer, centered around community development and small entrepreneurship instead of large scale commodity farming. Presenters will focus both on the maker do it yourself movement and how to encourage new farmers and entrepreneurs around local food systems based on lessons learned from both WVSU and USU Extension.

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The new microloan programs have successfully increased the Agencies visibility to veterans, small scale urban agriculture and underserved populations. The success will be illustrated with the use of statistical analysis and a few case studies.

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Increasing Farm Capacity and Local Fruit and Vegetable Access for Families in West Virginia: Kids Koupon Pilot

Kristin McCartney, Donald Reed, Dana Lester, Jennifer Graham and Loren Wells (West Virginia University Extension)

West Virginia ranks #1 in the US for inadequate fruit and vegetable intake. A total of 90% of adults, many parents, do not eat 5 serving daily. Children in West Virginia are also at risk as they are unlikely to receive adequate exposure to fruits and vegetables to develop dietary preferences for them. Programs targeting increased access and exposure to fruits and vegetables for children are needed in order to address this potential health risk. A grant from CSX/The Conservation Fund provided an opportunity to do just that.

The 2 year project has provided increased access through distribution of farmers market vouchers. Vouchers were distributed through channels including: 1. Open house events, 2. School based markets, 3. Summer youth programming, 4. SNAP nutrition education 5. Health clinics and 6. Double bucks. Nutrition education, recipes and taste testing were offered in coordination with voucher distribution. Community dinners were incorporated as a means to gather feedback on the program and promote increased awareness of local agriculture.

A total of 379 families and 1002 children have participated in the project, redeeming $10,082 in local produce. Community dinners reached 344 people. In a survey completed by 53 parents, 97% reported their child ate what they purchased and 87% reported their child was more excited about produce. In addition, 87% of parents reported buying more produce than they would have without the project. This project shows promise as a method for increasing intake of fruits and vegetables by children by improving their attitudes and access to locally grown produce.

Successfully Navigating the First Ten Years: Education Targeting Farm Developmental Stages to Achieve Long-Term Viability for Small Farms

Garry Stephenson and Lauren Gwin (Oregon State University Center for Small Farms)

Training and launching new farmers is a stated U.S. priority, yet Census of Agriculture data indicate the number of beginning farmers is decreasing. Beginning farmer education must go beyond simply offering training to get them started and instead create educational programs and tools that meet their needs as they develop from startups to mature farm businesses.

The Oregon State University Center for Small Farms & Community Food Systems, in partnership with Oregon Tilth, Inc., is developing a seamless learning progression from basic to advanced education based on key developmental stages of farmers and farm businesses. Educational programs are most effective when they meet farmers where they are developmentally, as farmers and as businesspeople.

Through interviews, focus groups, and surveys, we have identified key developmental stages that are consistent across farmers and farming systems. We will present this stages model and preview plans for our new instructional and experiential curriculum that focuses on business management, small farm profitability, and sustainable farming methods. We will explain how the stages model influences the curriculum’s content, organization, and timing. Our project builds on OSU’s established basic beginning farmer education programs in farm business management – Growing Farms: Successful Whole Farm Management – and hands-on crop production – Growing Agripreneurs.
Production and Marketing of Berries as a Potential Crop for Tobacco Growers in Southside Virginia

Jonathan Bobby and Reza Rafie (Virginia State University)

Since 2008, Virginia State University Cooperative Extension (VSU-CE) has promoted production and marketing of different berry crops including blackberry, blueberry and strawberry in Virginia. Fresh berry sales hold the highest market share within the Superfoods produce category. Media promotion touting the role of fresh berries in anti-aging and cancer prevention drive increasing U.S. consumer demand. Prior to 2004, strawberries held the greatest share of the U.S. consumer dollar. Strawberries are more common in retail markets and adventurous consumers are looking for and buying different berries.

Current market research demonstrates that blackberries, blueberries and raspberries are grabbing market share from strawberries. Interpreting market trends, researchers at Virginia State University have sought to position small growers in Virginia to take advantage of the new window of economic opportunity by equipping them to grow local specialty berries in Virginia. This effort has been supported by federal and state funds totaling $504,000. Program efforts have resulted in the training of over 500 Virginia growers in safe production and marketing of fresh berry crops; establishment of more than 10 acres of commercial fresh market berry production; construction of 25 individual high tunnels for local raspberry production, and the formation of the Virginia Berry Growers Association (VBGA) in 2012.

Using Land Grant Soil Testing Resources to Optimize Your Production System

Mark S. Reiter and Rory Maguire (Virginia Tech)

The Land Grant system has several services that greatly enhance the overall production and sustainability of farmers, regardless of acreage size, crop, or location. Soil testing is a service offered by Virginia Tech to assist producers with optimizing their individual fertilizer plan to ensure sound fertility for optimal yields and quality, but also to apply only what is needed for both economic and environmental benefits. Each year the Virginia Tech Soil Testing Lab analyzes over 50,000+ soil samples for Virginia producers and residents to assist with optimal fertilizer applications. This session will outline the overall soil science theory, lab methodology, and Virginia recommendations for Virginia crops.

Putting Your Small Farm to Work - The Business Side of OSU Small Farm Colleges

L. Tony Nye and Jeff C. Fisher (The Ohio State University Extension)

The Mission of OSU Extension Small Farm Colleges is to provide a greater understanding of production practices, economics of land use choices, assessment of personal and natural resources, marketing alternatives, and identified sources of assistance for new and small farms in Ohio. Our objectives are to improve the economic development of small farms in Ohio, help small farms diversify their opportunities into successful new enterprises and markets, and improve agricultural literacy. The agricultural landscape of today is very different than it was 20 years ago. Farms are fewer in number and growing in acreage. However, one segment is growing rapidly; those “Small Farmers” practicing agriculture on a small amount of acreage often new to agriculture and looking to begin a different lifestyle. The curriculum was enhanced to include business plan development providing participants a definitive strategy to develop their small farm and prepare them to apply for a loan. The modified curriculum included interactive lessons to create mission statements with goals and objectives, balance sheet and cash flow statements, marketing and business plans, and an executive summary. In 2016, 43 participants were identified as 52.4% female, 53.8% had never attended an Extension program, and only 35% had previous agricultural education. Seventy-seven percent did not have a financial plan and 79.5% did not have a marketing plan. As a result of attending this program, 80.5% of the participants indicated that they either started or changed their farm business plan.
Strategies for Supporting Value Chain Development between Small/Mid-scale Growers and Large-Scale Buyers

Rebecca Dunning, Emily Elders, Laura Lauffer and Robyn Stout (North Carolina State University, Center for Environmental Farming Systems)

The building of local and regional food systems has become a core initiative of agricultural educators and advocates alike. To date, much of the on-the-ground work of Extension and others in this arena has been to bolster direct-to-consumer marketing opportunities such as farmers markets and CSA/box programs. With these markets reaching saturation in some areas, educators and advocates are seeking strategies to link smaller growers to grocery retail and institutional food service markets. In this presentation we discuss the ways in which Cooperative Extension and grant-funded program staff at the Center for Environmental Farming Systems at North Carolina State University have utilized a collaborative supply chain approach to bridge scale differences between small and mid-scale “local” producers and larger “mainstream market” buyers: grocery retail chains, and university and military food service. The presentation reports the strategies and tools, and the successes and failures, experienced over the prior three years of two initiatives: North Carolina Growing Together, a 5-year initiative to connect smaller-scale producers to large-scale retail and food service buyers; and UFOODS, a 2-year initiative to build supply chain links from local producers into university communities. Both of these initiatives have involved regional and national buyers, and have included work with produce, meat, dairy, and seafood producers. We will share how the programs first attracted and built legitimacy among growers and large-scale buyers, and suggest specific ways in which educators and advocates can work to facilitate collaborative exchanges to benefit small and mid-scale producers.

Working With Amish and Other Plain Communities

Steve Engleking and Mark Kepler (Purdue University Extension)

There are many Amish and plain communities around the country and the nature of the farms in these communities is to be small farms due to the agricultural practices used such as using horses for tillage and other field work. A common paradigm is that these communities segregate themselves from the greater community. While this can be the case with some of the more conservative sects, many people in these communities seek the services of the Cooperative Extension Service and other agencies. Also, when new employees of agencies move into community with one or more of these settlements, they sometimes feel trepidation when attempting to engage these clients.

Two experienced Extension Educators, one who has been working in one of the country’s largest Amish settlements for over two decades and another who has worked in a Conservative Mennonite community almost as long, will discuss some elements of the plain lifestyles in their communities and how they were able to engage clients over time. They will share examples of programs they have done and how they are able to work within the values systems of their plain clients. Participants of this interactive session will be able to share some of their own experiences and to ask questions with the intent of establishing new professional contacts to enhance their own engagement within their communities.

TRACK 4A

SESSION 1 (LEVEL 2; SUITE 4C)

Extension Programming for Small and Part-time Farmers

Lynn F. Kime and Jayson K. Harper (Penn State University)

Working with small-scale and part-time farming audiences is very rewarding, but may be challenging. Extension educators regularly receive inquiries about how to produce specific crops or livestock. Since its inception in 1992, the Small-scale and Part-time Farming Project has provided educational materials to assist producers through the complexities of enterprise selection. The Agricultural Alternatives publication series was developed in response to a need for enterprise selection information by an underserved audience often unable to access Extension information through traditional means because of time limitations. This comprehensive series, which now contains 65 publications, has helped farmers analyze production alternatives by providing a balanced assessment of crop and livestock enterprises suitable for small-scale and part-time farming operations. All publications are available through electronic media and in hard copy format. Most publications introduce a specific enterprise and cover important issues including marketing, production, regulations, risk management, and enterprise budgeting. On-line interactive PDF budgets allow users to create and print their own individualized budgets. In addition, video interviews with actual producers are available on-line that provide insight into the advantages and disadvantages for 13 of the enterprises.

To support the enterprise oriented materials, a set of publications were written covering agricultural business management topics. Two publications on irrigation and one on organic vegetable production were also developed as supporting materials. An additional extension program was developed which supplements Penn State’s farm management extension programs. The Guide to Farming in Pennsylvania web site is a one-stop web site focusing on management and production.

Beginning Farmers and Ranchers 2.0: Scaling up to Profitability

Cindy Fake, Roger Ingram and James Muck (University of California Cooperative Extension); Daniel Macon (University of California, Davis)

Most beginning farmer/rancher training programs target start-up farms and ranches and overlook “advanced beginners,” those with four to 10 years of experience. University of California Cooperative Extension has been delivering beginning farming programs for 12 years, and began developing training and tools for “advanced beginning” producers in 2012.

The four- to 10-year period is critical in the evolution of most farms. Often, the producer works more than full time but only earns a part-time income. These producers need to build to scale in order
to achieve profitability and long-term economic viability. In order to decide which operational components can be scaled-up, they need to critically analyze their operation, their markets, and assess the profitability of each crop or enterprise.

Providing business and economics training specific to farmers beyond the start-up phase is critical to growth and development of a new generation of successful farmers. 32% of producers in Placer and Nevada Counties are beginning farmers and ranchers. 81% of farms are under 50 acres, and many are highly diversified. Profitability is challenging because of the lack of efficiencies and economies of scale.

This paper will present the results of training and surveys of small-scale producers in the northern California foothills. It will describe the challenges farmers face in scaling up and key lessons learned from analysis of profitability and scale of small farm businesses. Our experience shows that farms who streamline operations; growing fewer crops, improving labor efficiency, and expanding into wholesale and direct-to-retail markets are more profitable.

Challenges and Outreach Strategies to Working with Underserved Populations

Duncan M. Chembezi and E’licia L. Chaverest (Alabama A&M University, Small Farms Research Center)

Since 1994, the Small Farms Research Center at Alabama A&M University has provided outreach training and technical assistance to hard-to-reach minority populations who own and operate small farms, often with limited resource. Small and limited resource agricultural populations are valuable members of the rural community in America. It is frequently believed that it is from these segments of the agricultural audience that new approaches to agricultural production and marketing are developed, out of the shear necessity for survival. Moreover, mainline outreach and extension programs typically miss the specific needs of these individuals. Identifying feasible approaches, strategies and credible organizations to address their needs and challenges is key to ensuring the survival of this often neglected clientele in the farming community. Experience shows that well-crafted partnerships between public and private organizations involving the government, higher education and the private sector hold the key to effectively addressing the needs and challenges of this client group. The proposed presentation discusses some of the successful and effective strategies usually used to working with underserved and hard-to-reach populations. The discussion centers on the challenges and the broad applications of these strategies with specific examples from Alabama and southern part of the U.S. The Small Farms Research Center at Alabama A&M University has traditionally collaborated with the government – USDA agencies – to achieve this goal. Community-based organizations, including religious organizations and key community leaders, are also utilized to reach these hard-to-reach populations.

Growing Farms: Successes and Challenges Using an Online Format for Beginning Farmer Education

Gary Stephenson, Heidi Noordjik, Maud Powell, Kristin Pool, Lauren Gwin, Amy Garrett, Melissa Fery and Nick Andrews (Small Farms Program, Oregon State University)

Growing Farms: Successful Whole Farm Management is a beginning farmer education course offered by the Small Farms Program of Oregon State University. The course enhances the success of new farmers by using a whole farm framework that integrates biological, physical, financial and family aspects of the farm business. Supported by a NIFA BFRO grant, the formerly eight-week exclusively face-to-face workshop series was transformed into a sophisticated online course. The workshop series is now offered using a hybrid online and face-to-face approach in Oregon and as an independent self-paced course nationally. For the hybrid format, face-to-face discussions and farm tours enhance the online material.

The online content is presented in six modules as text, video, and interactive multi-media. Each module provides over five hours of instruction (30+ hours for the six modules). The online content makes the information consistent wherever the course is offered. Modules titles and content are: Dream It: Strategic Planning; Do It: Farm Operations; Grow It: Production Systems; Sell It: Marketing Strategies; Manage It: Farm Finances; Keep It: Managing Risk.

Evaluation data have been collected for the hybrid course for two years using anonymous questionnaires and group discussions, and the independent self-paced course for one year using an online survey. The data provide insights into the perspectives and behavior of the participants, and highlight the strengths and some challenges of using the online format. This information is leading to adjustments in how the current course content is packaged and how to design future course additions.

Farm Beginnings Provides Practical Education for Beginning Farmers

Gary Lesoing and Connie Fisk (University of Nebraska-Lincoln); William Powers (Nebraska Sustainable Agricultural Society); Wyatt Fraas (Center for Rural Affairs)

Nebraska Extension along with partnerships with SARE, the Center for Rural Affairs, and the Nebraska Sustainable Agriculture Society has offered eight Farm Beginnings® Programs since 2005. This Program is an educational training and support program designed to help people who want to evaluate and plan their farm enterprise. Farm Beginnings® participants engage in a mentorship experience and network with a variety of successful, innovative farmers, attend practical, high quality programs, farm tours and a sustainable agriculture conference. The program is unique in that several successful farmers participate in the program as presenters, explaining firsthand the nuts and bolts of their farming operation.
ORAL PRESENTATIONS

At the 10 classroom sessions, information is presented on holistic management, goal setting, farm planning, government programs and resources, marketing, financial management and developing a business plan. In the past five years we have had 29 farms complete Farm Beginnings® and 23 or 79% are involved in production agriculture at some level.

The program has shown a significant impact. One of our farmer participants was a disabled American Veteran. He completed the class, successfully received a USDA Beginning Farmer loan and began raising chickens to produce eggs and has recently purchased a small farm for his operation. He has served as the spokesperson for the Farmer Veteran Coalition. Fifty percent of the classes are women farmers. The Farm Beginnings® class introduces them to a network of friends, mentors, and entrepreneurs who share the same values. These networks and relationships that people form last a lifetime.

Farmland Conservation 2.0: Engaging the Land Trust Community to Protect America's Working Farms

Holly Rippon-Butler and Lindsey Lusher Shute (National Young Farmers Coalition)

Land is a necessary resource to create and sustain small farmers and ranchers. Yet farmland in America is a limited and diminishing resource, and one that is increasingly hard to access for small farmers due to the pressures of development, farm consolidation, and farmland purchases for estate properties.

In 2013, National Young Farmers Coalition (NYFC) published Farmland Conservation 2.0: How Land Trusts Can Protect America's Working Farms. Since then, we have been engaged in educating land trusts around the country on the innovative tools and strategies they can use to better protect working farmland and keep land in the hands of farmers. This report focuses on successful, pioneering strategies that land trusts are employing to save farmland and support working farmers within urban-influenced areas. If significantly scaled-up, these strategies that build on traditional farmland conservation models will help to guarantee a vibrant food system and long-term food security for our nation.

In our oral presentation, we will discuss the results of our 2013 survey and report, as well as our experience working with land trusts and farmers across the country. The two topic areas addressed are #3 concerning roles for non-profits and others in sustaining small farmers and ranchers; and #4 concerning outreach, training, and research priorities for underserved audiences.

The 2017 Census of Agriculture: What's in it for Me?

Hubert Hamer, Barbara Rater and Virginia Harris (USDA-NASS)

Abstract: The USDA's National Agricultural Statistics Service (NASS) conducts hundreds of surveys every year and prepares reports covering virtually every aspect of U.S. agriculture. NASS provides the basic agricultural and rural data needs for the people of the United States, those working in agriculture, and those living in rural communities by objectively providing important, usable, and accurate statistical information and services needed to make informed decisions.

NASS is also responsible for conducting the census of agriculture program that provides comprehensive information about the Nation's agriculture every 5 years. The Census of Agriculture is a complete count of U.S. farms and ranches and the people who operate them. Any person with estimated or expected annual sales of agricultural products of at least $1,000 is considered a producer and is counted on the census.

This session will demonstrate why such a comprehensive questionnaire is needed to meet the myriad public data needs. Participants will learn why key data items are developed, such as number of farms, size of farms, expense and receipts data, and demographic data. Historical comparisons and a demonstration of how to access census data are also planned.

NASS will also share its plans for the upcoming 2017 Census of Agriculture, and explore the ways that community based organizations, extension professionals, agricultural professionals, and farmers may participate in the Census of Agriculture.

TRACK 4A

SESSION 3 (LEVEL 2; SUITE 4C)

Effective Training & Technical Assistance Resources for Refugee Beginning Farmers

Hugh Joseph (Tufts University Friedman School of Nutrition Science & Policy); Danielle Scherer, (ISED Solutions, Boston)

Over 80,000 refugees are resettled in the US annually; an estimated 40% have agricultural experience. In 2016, over 65 beginning farmer training and technical assistance (T&TA) incubators across the country are assisting thousands of refugees to begin farming and market gardening operations. However, most T&TA resources (manuals, guides, Internet sites, etc.) are not accessible to refugees, most who lack English language and literacy proficiencies. How can this be addressed?

An innovative program has brought together 20+ refugee incubators to develop, use, and evaluate resources specifically designed for this constituency. It comprises several elements - curriculum development, pedagogy, farmer inclusion and leadership, and communications. This includes:

- Developing audience materials that are mostly visual and oral (video, photos, graphics, classroom tools, demonstrations);
- Comprehensive modules (workshops, classes) with clear outcomes, multiple audience tools, and instructor facilitation guides;
- Best practices;
- Engaging refugee farmers in the T&TA process;
- Communications adapted to audiences with limited education and language comprehension.
A development team has been producing these resources designed to be shared and adapted by other programs in classroom and field settings. They incorporate presenter or instructor facilitation guidance for appropriate use of the materials and processes described. Project partner incubators are pilot testing these products and providing feedback and evaluation to improve them. The result is a growing collection of resources for assisting a fast-growing sector of underserved farmers who otherwise have few tools that address their capacities and interests. These resources are being posted on nationally-promoted websites to reach a wide and diverse user base.

Enabling Successful Solutions and Change, Capacity Building for Underserved Farming Populations

Jennifer E. Taylor (Florida A&M University State Wide Small Farm Program)

It is important to ensure local food security with agricultural management strategies that enhance sustainable agroecological production, encourage local food systems, and which embrace the benefits of local and global small farm populations. FAMU StateWide Small Farm Programs is an active participatory capacity building program designed to assist and equip underserved farming populations - including beginning farmers and ranchers, minority farmers, farm workers, veterans, etc. and their communities toward a thriving sustainable development. The Program uses a participatory integrative approach to identify individual/community needs and provide relevant education programs, hands-on training, and technical assistance to underserved farming populations and their communities, enabling successful solutions and change.

The Land Stewardship Fair: Engaging Rural Youth in Sustainability

Kathryn Cole (Grayson LandCare, Inc.); Ruth Ross (Journal of Psychiatric Practice); Katie Trozzo (Virginia Tech)

Grayson LandCare, Inc. is a grassroots non-profit in Grayson County, VA that works for financial security, a strong community, and a stable and healthy environment. For the past eight years, we have hosted a Land Stewardship Contest for high school students with prizes of $1,000, $500, $250 and $50 honorable mentions. Students submit a written description of a local project that would meet our triple-bottom-line mission. They are required to research the topic and, if selected, present at a public fair. Judges are selected from area colleges, universities, and relevant agencies and speak with each participant, as well as reviewing the written materials. Using a science-fair algorithm, projects are judged and winners acknowledged in the local press.

In addition to the knowledge gained on their topic, participants benefit by the opportunity to present to, and receive feedback from, their peers, distinguished judges, and other adults. Our first winner, a ninth-grader, used his winnings to launch a successful egg business that he continued through high school. By using chicken tractors on his family’s beef cattle farm, he rotated the chickens behind the cattle and helped build a regenerative ecosystem. He has graduated from our land grant university and plans to return to farming.

Grayson County is one of the poorest in Virginia, having lost agricultural markets to the global food system and manufacturing jobs to outsourcing. We see small farms as our economic future, and helping tomorrow’s adults participate in that vision is a vital strategy.

Building Capacity for Beginning Farmer Start-up and Sustainability across Virginia: A Collective Impact Approach

Kim Niewolny, Lorien MacAuley, Thomas Archibald, Natalie Cook, and Allyssa Mark (Virginia Tech)

The scale and complexity of the beginning farmer issue raises critical questions about the strategies required to achieve long-lasting impacts for small farm sustainability. Funded by a USDA Beginning Farmer and Rancher Development Program (BRFDP) grant, the Virginia Beginning Farmer and Rancher Coalition Program (VBFRCP) utilizes a shared decision making model and participatory program approach to enhance start-up opportunities for a diversity of new farmers across Virginia. Particularly, the VBFRCP centers on a state-wide coalition to provide whole farm planning curricula and trainings, farmer networking and mentoring, and capacity building opportunities for coalition partner organizations. With Virginia Cooperative Extension as the backbone organization, VBFRCP partners work together to support beginning farmers and their communities with a special focus on addressing system-wide and historically neglected farmer needs. From a collective impact perspective, this work requires broad cross-sector coordination and a networked approach to allow for collaboration and communication,
Choosing the Right Tool for the Job at Hand: A Review of Business Planning and Business Model Development Approaches for Farm & Food Enterprises

Dave Lamie, Gary Matteson, Stanley Green and Diana Vossbrinck (Clemson University)

Small farm and food businesses are often advised to engage in careful business development planning, culminating in a formal written business plan. Doing so provides opportunities for the entrepreneur to refine their vision, goals, objectives, to illuminate realities related to market potentials, supply chain dynamics, staffing, cash flow, and profitability, as well as to secure funding in some cases. Some entrepreneurs are intimidated by this process, often due to lack of experience. It is likely that many businesses do not reach their full potential due to their lack of a formal business plan. Many approaches and tools have been developed to assist these businesses through this process. The website www.farmbiztrainer.com provides information on more than 30 examples. But, there is a lack of practical advice available for business planning educators/trainers/facilitators to help them make informed choices about which tool to use for specific situations. Nor is there any advice on how various tools might be used in sequence (or simultaneously) to assist businesses through their developmental process. This presentation will provide an overview of on-going applied research focused on providing insights and advice to those who work directly with these emerging businesses. The results of this work will have direct applicability to those designing and/or implementing educational business development programs, as well as to the businesses themselves, as they go through the process of choosing business development and planning tools.

Assessment of the Causes of Risk Management Gaps on Small Farms and Ranches: The Case of Selected Small Farmers in Mississippi, Alabama and Florida

Samuel Scott, Keith Mitchell, Sadeeka Scott and Rachel Talsko (North-South Institute, Inc.)

Sustained efforts by USDA over the last two decades supporting small farmers have shown significant successes. However, there are few factors that continue to impede the viability of small farms. One of group of these that reduces the access to and use of Federal programs is that of the management risks on farms. USDA/Risk Management Agency provided funding to North-South Institute to assist with risk management research and education as a pilot in three states on 286 farms with 30 farms selected as a panel to be studied to (a) identify the causes of gaps in risk management and (b) responses in implementing risk mitigation tools in addressing particular production, market and financial risks.

The purpose of “The Production Management Finance Support (PMFS) project,” was to explore solutions to the risk management needs by providing technical and management assistance to ensure eligible producers are minimizing risks on the farm. The project was implemented over three years, with research and education conducted as parallel tracks among the groups. A total of 286 new, small and socially disadvantaged farmers operating on 11,583 acres in AL (99), FL (93) and MS (94) received direct non-insurance based risk management assistance. The major findings are that Financial Planning, Risk Management Planning, and Level of Education are the top three factors that that strongly predict participation in any crop insurance and/or NAP programs. While total Input Cost Associated with Enterprise Selection, Risk Experience, Net Farm Income, and Age of the farmer were relatively important, Ethnicity and Location of Farm were the least important predictors.

Developing Personal Risk Management Plans for Limited Resource Farmers

Laurence Crane (National Crop Insurance Services); Albert Essel (Lincoln University); Nelson Brownlee and James Hartsfield (NCA&T University); Edoe Adbojad (South Carolina State University)

Project goal was to assist Limited Resource and Socially Disadvantaged farmers in North and South Carolina StrikeForce counties in responding to risk, by developing their own personal risk management plans. Education consisting of three sequential workshops in each location (Lumberton and Clinton, NC; Bowman, SC (9 total) supplemented by personal assignments and individualized counseling was delivered via a partnership of subject matter experts and local educators. Participants were expected to spend at least 20 hours completing homework assignments after each workshop (60 hours total).

The primary outcome was for participants to develop the skills and to understand their own operations well enough to establish a written goal for each of the five areas of risk specific to their farm, delineate for each goal at least three specific actions to reach those goals, and commit to follow through and implement their personal risk management plan.

Educators supported and monitored their progress throughout and interviewed each participant at project end, recording the number of actions completed. Attendees reported spending an average of 66.9 hours each completing homework assignments (69.0 in Clinton, 67.02 in Lumberton, 65.02 in Bowman).
There were 76 participants who accomplished all actions they had specified in their Personal Risk Management Plans by the end of the reporting period. An additional 18 participants had delineated some actions to be accomplished outside the time frame of the project, like restructuring a loan at payment time.

Results suggest this concentrated, participatory approach to education increases the likelihood of long-term behavioral change.

Agricultural and Natural Resource Challenges on the Hopi Reservation: Results of a Needs Assessment

Loretta Singletary, Staci Emm, Trent Teegerstrom and Matt Livingston (University of Nevada, Reno)

This presentation summarizes the results of a needs assessment survey conducted between 2013 and 2014, using primary data collected from interviews with 166 American Indian farmers and ranchers operating on the Hopi Reservation. Survey respondents ranked 19 of 39 plausible agricultural and natural resource issues as a concern or major concern (mean score of at least 3.5 or greater). While the remaining 20 items ranked comparatively lower, 19 of the 20 mean scores were still greater than neutral (3.02 to 3.43). The top four major concerns involve Hopi tribal government organizational, leadership, communication and relationship-building skills, in addition to lack of support for youth involved in agriculture. Water access and delivery for agricultural irrigation for irrigation and livestock and water quality issues also ranked as major concerns in addition to a lack of reservation-wide planning for sustainable agriculture. Based on the findings reported here, Extension and other USDA outreach professionals must strive to design educational and assistance programs that account for the unique challenges that Indian farmers and ranchers face. An understanding of the background and complexities surrounding Indian land tenure and water rights alone will assist those working with Indian producers to better understand land-use decisions and motivations behind the decisions as well as the absence of decision-making. It may also help to improve and increase producers’ participation rates in agriculture-assistance programs involving the Hopi Reservation land base.

Outreach, Training and Education to Develop Business Skills for New, Beginning and Traditionally Underserved Agricultural Producers

Nelson T. Daniels, Vidal Saenz, Alfred L. Parks, Billy Lawton and Oluwagbemiga Ojumu (Prairie View A&M University)

For farmers in general and more specifically for new and traditionally underserved small scale farmers and ranchers, obtaining adequate financing to maintain agribusinesses in a major concern. While a majority of these producers have access to land, there is a great need for farm equipment upgrades and for farm operating funds. In order to acquire the needed funds, the farmers need to obtain knowledge to keep basic farm records, develop skills on how to better market their products and gain the expertise needed to apply for funds to operate their businesses.

Prairie View A&M University has been conducting hands on educational training programs focusing on business management, farm recordkeeping, product marketing and loan assistance. These programs provide producers with information about sources of funding including both grant and loan opportunities. Although traditional lending sources are discussed, much of the focus on loans is related to obtaining funding through the USDA - Farm Service Agency (FSA). In addition to the workshops, Extension staff members provide hands-on, one-on-one assistance to help these new and traditionally underserved agricultural producers in completing farm ownership and farm operating loan applications. As a result of the program, many of these new, beginning and traditionally underserved agricultural producers have successfully applied for several million dollars in loans from USDA and traditional lending sources.

Addressing inequitable participation of Socially Disadvantaged Farmers in USDA program: Survey Result

Oluwarotimi Odeh (California State University, Stanislaus); Fidelis Okpebholo (Virginia State University); Vayo G. N’Guessan (Jean Lorougnon Guede University, Cote d’Ivoire)

Purpose: To identify and address the root causes of inequitable participation of Socially Disadvantaged Farmers and Ranchers in USDA agricultural programs.

Objectives:
1. To collect and analyze information on the socially disadvantaged farmers and ranchers in selected counties in Virginia.
2. To conduct outreach activities to identify root causes of failure to achieve equitable participation in USDA agricultural programs by Socially Disadvantaged Farmers and Ranchers, as well as development of recommended solutions.
3. To develop and deploy improved approaches for outreach and technical assistance.

Methods:
Over 400 surveys were administered to socially disadvantaged farmers and ranchers, extension service providers and USDA agencies staff in Virginia. Additional data were sourced from two follow up workshops for farmers and service providers, several one-on-one meetings and focus group meetings.

Results: A compilation of the factors limiting the participation of socially disadvantaged farmers and ranchers in USDA Agricultural programs. A list of forty-five (45) strategies that are proposed for addressing and enhancing participation of these target farmers and ranchers in USDA agricultural programs are also included.

Conclusion: There is need to develop a tool-kit of effective strategies for boosting active participation and farm productivity of socially disadvantaged farmers across the nation through collaborative partnerships between land grant institutions, USDA agencies and local, community based organizations.
**TRACK 4B**

**SESSION 2 (LEVEL 2; SUITE 4D)**

Growing New Farmers: Building Effective Training for Beginning Farmers

*Sarah Sohn, Aleya Fraser and Joanna Winkler (Future Harvest CASA)*

This session will open with an overview of Future Harvest CASA's Beginner Farmer Training Program (BFTP), a year-long immersive program that combines classroom learning with in-the-field training. FHCASA staff will share how the program has evolved since its inception 8 years ago, focusing on program changes that have been made with the specific aim of training more accessible to a wider diversity of farmers, including low-income and socially disadvantaged farmers, urban and second-career farmers. The session will also feature graduates of the program who have gone on to successfully start their own farms. The graduates will speak specifically about which specific topics and types of support they feel new farmers most need. We hope for this session to be somewhat interactive, too, with members of the audience sharing their experiences of what works and what doesn’t in beginning farmer education.

Get off your Bum and Grow: Encouraging Engagement in Youth Gardening Programs

*Tabitha Surface, Jenny Totten and Nikki Erwin (West Virginia State University Extension)*

Internet cats and Sherlock memes versus building garden beds: While a few kids may opt to go outside and get their hands dirty, more will stick close to their smart phones and comfy chairs.

Experienced agents from West Virginia State University Extension Services (WVSUES) share what they’ve learned starting and sustaining gardening programs that are school, after school, alternative school, and community based. From how to make gardening relevant to keeping kids moving, presenters will share strategies in getting kids interested and maintaining involvement in garden based programming. They’ll address why community members—parents, teachers and neighbors—need to be a part of the process and how to make that happen. Acknowledging the unique challenges experienced by youth gardening educators and facilitators, from Nature Deficiency Disorder to knowledge gaps about careers in farming, presenters will provide a number of real-world solutions to creating the next generation of farmers.

Production Space Design for the Smallest Farmer: Engaging Children in Agriculture at Any Age

*Valerie Bandell and Jenny Totten (West Virginia State University Extension)*

Youth production spaces serve a population with needs very different than adult farmers. Likewise, urban gardens don’t function with in-the-ground row crops as their model. When the two populations intersect, planning becomes about creating spaces that engage and promote success, that emphasize accessibility and a sense of ownership while maximizing small spaces and overcoming challenges, like soil safety, in urban environments.

Through multiples programs, West Virginia State University Extension agents have learned to anticipate problems at production sites with youth farmers and build-in the solutions before they arise. Presenters will outline how the needs of youth gardeners and youth gardeners in urban spaces differ from adult farmers and traditional farms. They will highlight what to look for at a site before planning begins and share examples, with photographs, of successful youth garden production spaces in urban environments. They will discuss adaptive spaces, techniques, and tools for youth populations from preschool to high school. Finally, they’ll share how to integrate curriculum and boost engagement through themed gardens.

**SESSION 3 (LEVEL 2; SUITE 4D)**

Working with Refugees in Community Gardens

*Wayne Long (University of Kentucky Cooperative Extension)*

The Jefferson County Cooperative Extension Service manages 11 community gardens in Louisville, Kentucky. Two of these gardens have a high refugee population with people from Somalia, Bhutan, Burundi, and Burma. At the 7th Street Community Garden, which is approximately 5 acres, 75% of the garden plots (173 plots) are used by refugees. The Southside Community Garden, 80 plots, is made up entirely of refugee gardeners. Including family members, these gardens are feeding approximately 1,000 refugees.

This oral presentation will highlight best practices for working with a diverse group of refugees. Learn how the Jefferson County
Cooperative Extension Service’s partnership with Catholic Charities has laid the ground work for a successful refugee community gardening program. Beginning with a Small Farmer & Rancher grant which allowed for the hiring of translators within those populations through the transition at the end of the grant to continue the partnerships, this presentation will explore the need for land access among this population, the language and cultural barriers, and how to grow a sense of community among a diverse group of gardeners.

Extension Training for Agritourism Development and Risk Management

Brian Schilling (Rutgers Cooperative Extension); Michelle Infante-Casella (Rutgers Cooperative Extension, Gloucester County); William Bamka (Rutgers Cooperative Extension, Burlington County); Stephen Komar (Rutgers Cooperative Extension, Sussex County); Lisa Chase (University of Vermont Extension); Lucas Marxen (Rutgers Office of Research Analytics)

Purpose/Objectives: Small U.S. farms increasingly rely on agritourism to expand farm income, employ family members, and diversify products and markets. At the same time, agritourism presents challenges to farms, especially in the areas of farm safety and liability management. This presentation provides practical advice to small farm operators on how to prepare for the safe accommodation of agritourism visitors and highlights liability management strategies to protect business and personal assets.

Methods: Extension faculty from several northeast states developed web-based educational resources (http://agritourism.rutgers.edu/training/) and offered training to agricultural service providers and farmers engaged in (or contemplating) agritourism. The project was supported by a Northeast Sustainable Agriculture Research and Education professional development grant.

Results: Educational content was delivered through 27 workshops, classroom trainings, and small-group farm assessments, and 4 nationally advertised webinars. Training events reached more than 760 farmers and 690 Extension educators, agency staff, and other agricultural service professionals. A subset of project participants (n=24) reported that they used project resources in professional practice or disseminated project materials to more than 1,600 farmers. Participants further reported a number of farm-level changes resulting from their outreach, including farm safety improvements (n=207 farms), adoption of liability management strategies (n=190), and changes in employee training (n=126).

Conclusions: Common hazards on agritourism farms will be discussed, along with recommendations for developing a program of farm safety and examples of farm-level adaptations to improve visitor safety and address liability concerns. Web-based educational resources will be introduced, and farm evaluation checklists will be provided to session attendees.

Tax Planning: Defining Corporate Structure

Darrell Tennie (The Tennie Group, LLC)

This tax planning presentation will give clarity to listeners in understanding the difference between the different entities, the relation to agriculture and the benefits each entity such as LLC, S-Corp, Partnership, Sole Proprietorship, C-Corporation offers based on how the company is structured. Agricultural tax benefits that’s most beneficial to farmers, small businesses, and individuals

Learning Objectives: Know what entity you are and the requirements attached. Introduce recordkeeping into your day to day personal and business activities. Practice sound financial management.

Using Business Organizations to Limit Risk and Plan for the Future

Sarah M. Everhart (University of Maryland Francis King Carey School of Law)

A staggering number of farms are owned as sole proprietorships. By owning farming operations as sole proprietorships, farmers unknowingly expose themselves and their personal assets to liability risk. Farmers can benefit by utilizing a business organization such as corporation or limited liability company as an ownership entity of property and/or equipment. In addition to reducing personal risk, utilizing a business organization can ease transitional and estate planning. Many farming operations have multiple family members working together and sharing profits and a properly established business organization is the best way to manage these complex arrangements. Establishing a business organization is not an expensive or time consuming legal matter and proper planning can provide valuable benefits for farms of all size.

TRACK 4B

SESSION 4 (LEVEL 2; SUITE 4D)

Training and Research Opportunities for Undergraduates in Agricultural Biotechnology

Sarwan Dhir (Fort Valley State University)

Undergraduate research experience has often been cited as one of the most effective tools in helping students developing problem-solving questions. To increase the number of undergraduate student participation in the agricultural biotechnology, we have initiated an undergraduate degree program in Plant Sciences-Biotechnology major. Students are exposed to basic principles and application of biotechnology through hands-on experience in basic genetic engineering and molecular biology techniques. Student recruitment and retention is supported by financial support in the form of STEM scholarship (35 scholars). In addition, we have developed collaborations with major research institutions, federal labs and industry for students to conduct summer internship in biotechnology for 10 weeks. Students improve scientific aptitudes, skills and become proficient in the use of scientific techniques. Besides acquiring the academic and laboratory skills, students interact with invited speakers which improve their written/oral communication and leadership
skills and help prepare them for award winning presentations at scientific meetings. The program has been well received by students, and several of them have already joined MS/PhD program in Plant Molecular Biology, federal labs, industry and professional school. Hypothetically, students matriculating from our program will have a strong foundation in agricultural biotechnology. Their skills will be enhanced by research training received during summer internships, and links will be established for further study at the graduate level to increase the number of minority students entering into STEAM fields.

Let's Grow Our Own: Leveraging Resources and Creating Partnerships to Prepare New, Small-Scale Growers at the University of Arizona Cooperative Extension

Kelly Murray Young (University of Arizona Cooperative Extension)

Maricopa County, Arizona is home to over four million people. Despite Arizona’s long agricultural history, it is difficult for newcomers to enter farming for a variety of reasons. Started in 2011, the University of Arizona (UA) Cooperative Extension’s Beginning Farmer program in Maricopa County has served hundreds of new and prospective small-scale urban agriculture producers in cooperation with many public and private partnerships. Among the the UA’s partners are the USDA SNAP-Ed program, Arizona Department of Agriculture, Maricopa County Health Department, City of Phoenix, food banks, ag lenders, insurance agents, non-profit health foundations, market managers, refugee resettlement agencies, and other colleges and universities. The program offers an 8-week business planning class, a 5-week sustainable crop production class, a 1-acre incubator farm, standalone classes, and a 2-day exploratory workshop. SNAP-Ed funds 2.0 FTE staff, most curriculum materials, and tools and supplies for the incubator farm. The formation of the Maricopa County Local Food System Coalition in 2015 brought the partners together to work for a sustainable and just food system, including advocacy and support for small urban food producers.

Electronic Newsletters That Clients Actually Read

Donna Coffin (University of Maine Cooperative Extension)

Through the years Extension educators have been charged with assisting people with research based information focused on client’s needs. They have always used a variety of methods to communicate with their clientele including newsletters. Printing and mailing costs for surface mailed newsletters is no longer financially feasible with their clientele including newsletters. Printing and mailing costs for surface mailed newsletters is no longer financially feasible with their clientele including newsletters. Feedback on the number of clients who actually opened and read the newsletters was unknown. Extension staff has turned to electronic versions of newsletters to educate their clientele more efficiently with costs at 1% of surface mailings. Feedback on newsletter readership is now available.

Cost for the system runs less than $900 a year for up to 10,000 clients who can sign up for one or more of the 10 newsletters produced by seven county and state offices. Time sensitive information can be sent immediately to these interest groups and others. Notification of newsletter emails can be shared with Facebook & Twitter accounts with one click.

Open rates average 34% and click-through rate (when someone clicks on a link of interest in the newsletter) averages 22% while the industry average is 20 % and 8%. Extension’s newsletters are opened, viewed and folks are interacting with the material presented at a rate higher than similar industries.

The Constant Contact(TM) email management system has proved to be an effective and efficient way for County Extension staff to remain in contact with their clientele and assess the relative use and impact of these communications.

Using Smart Phone and Tablet Apps on the Farm

Inetta Fluharty (West Virginia State University)

Many farmers are quickly adopting smartphone technology and are making greater use of those devices than the general public by using their smartphones more as a working tool and less for entertainment. By using a variety of smartphone apps, a wide range of work-related chores can be conducted including, checking weather, markets, and texting family and employees.

While many farmers still find the new technology frightening and are unsure how to begin using their smartphone on the farm, others have found ways to embrace the new technology and make it work for them. Even the farmer who uses their smartphone on the farm can become overwhelmed searching through the thousands of apps available. To help navigate this maze, apps for various farm related tasks have been tested for practicality and ease of use.

The purpose of this workshop is to familiarize participants with various IOS and Android apps that can assist a farmer or rancher in their operation. Apps assisting with tasks such as record keeping, crop management, herd management, weed and pest identification and many others will aid the farmer to choose how to effectively use their smartphone or tablet in their agricultural enterprise.

**ORAL PRESENTATIONS**
Increasing Small Farm Access to Retail Markets: Opportunities and Challenges in the Intermountain West

Colette DePhelps, Soren Newman and Cinda Williams (University of Idaho)

In Idaho, low population densities and long transportation distances to urban markets present challenges for small farms interested in selling their products direct or semi-direct to grocery stores and restaurants. A University of Idaho research and Extension team conducted surveys of small vegetable, fruit, and livestock producers and Inland Northwest grocery stores and restaurants to gain a broader understanding of the current challenges and opportunities for buying and selling food (i.e., produced locally (100 miles) and regionally (400 miles)) in Idaho. We also interviewed producers, grocers, chefs, food distributors, and food hubs to build relationships and better understand the food distribution issues in different regions of the state.

This presentation provides an overview of the products restaurants and retailers are most interested in purchasing locally, what buyers say are the best strategies for marketing and selling local products to local buyers, and key factors that influence retailers’ and restaurants’ interest and willingness to buy local products. Producer survey highlights will include most profitable small farm products, barriers to selling locally and regionally, small farm interest in selling through food hubs and distributors, and educational or infrastructure needs for increasing sales to retailers and restaurants. Finally, we will show how survey and interview data is being used to determine where more production of specific crops and livestock products is needed to meet the existing retail market demand, and ideas for increasing sales of local food through food hubs and distributors.

Determinants of Small Farm Profitability: How Important are Local Foods?

Stephen Vogel (USDA Agriculture Economic Research Service); Becca Jablonski (Colorado State University); Todd Schmit (Cornell University)

Despite predictions that the number of small farms would decline precipitously throughout the United States (US Congress 1986), we have seen numbers hold firm. This paper explores what factors determine small farm profitability and, importantly, how various factors may differentially affect small versus large farms, with particular attention to participation in local food sales channels. Utilizing pooled 2008-2011 and 2013 U.S. Department of Agriculture Agricultural Resource Management Survey data, we divide the sample into two groups: small farms (<$350,000 in gross cash farm income), and large farms (≥$350,000 in gross cash farm income). Results show various factors with statistically significant relationships on small farm profitability that are both positive (i.e., total value of production, specialty crop producer, fixed share of total costs, household net worth, government payments, years of experience, primary occupation farming and rural location) and negative (i.e., acres, livestock or dairy producer, labor share of total costs, off farm income, and years of education). In terms of the impact of market channel selection, we see increasing the direct-to-consumer sales share of gross revenue reduces small farm profitability, whereas exclusively using intermediated marketing channels increases it. Based on the results of our findings, we recommend that policies intending to support small farm development through enhanced market access move beyond enhanced direct-to-consumer markets through the development of scale-appropriate infrastructure to support intermediated sales.

Linking Consumers to Small-Scale Meat Goat Producers

Enefio Ekanem, Mary Mafuyai, Fisseha Tegegne, Prabodh Illukpitiya and Hiren Bhavsar (Tennessee State University)

According to the USDA, Tennessee ranks second to Texas in goat production in the United States. Data from the 2012 Census of Agriculture documented the existence of 2.6 million-goat inventory on 128,456 farms in the U.S. About 1.2 million goats were sold, generating $152.1 million in that same period. Tennessee goat sales contributed about $5 million to the state’s economy. In 2015, there were 124,200 goats in the state’s inventory. As is common to most small farmers, goat producers have limited opportunities to access the dynamic meat market in Tennessee. This paper (1) discusses the markets and outlets where goat meat is sold in Tennessee and, (2) analyzes factors that influence meat goat consumption in Tennessee. The on-going research uses surveys and face-to-face data collected from consumers in Tennessee. Paper discusses how research results were used in training small farmers, extension educators, community leaders, stake holders, students, researchers, and others interested in marketing meat goat. The audience will enhance their knowledge of how consumer preferences in goat meat can be used in addressing common marketing issues faced by small farmers.
Lulus Local Food: Connecting Producers to Retail Consumers

Molly W. Harris and Chris Cook (VaFAIRS)

There is a huge growth in local food and one of the barriers for small farms is access to the market and inventory control. Designed to allow producers a single point of entry to access multiple hubs, Lulus Local Food software program is flexible enough to allow CSAs and small farms the benefit of online sales straight from the farm in addition to serving the multi farm hubs. A great program for serving food deserts and underserved areas, Lulus Local Food is providing a virtual infrastructure for small startup farms to enter the marketplace with little to no initial investment.

Lulus Local Food is an innovative online farmers market program designed to generate a direct to consumer market hub for small scale farmers. The software program provides infrastructure for Hub Administrators, local entrepreneurs, community food councils, farmers markets, CSAs and small family farms to conduct virtual online sales.

This seminar presents a brief overview of the program and how this program may be used to set up a food hub supplying fresh nutritious food direct from the farmer to the consumer with minimal overhead and operational costs. Based on several years of successful operation by hundreds of producers and several hubs, it will outline the steps necessary to be set up, and the scope the program can cover, ranging from food hubs, and CSAs to individual farmers wishing to make retail sales.

Why Cooperatives are the Best Tool for Low-Income Communities to Work Their Way Out of Poverty

John Zippert (Federation of Southern Cooperatives/Rural Coalition)

Organizing, developing and strengthening cooperatives as a way to help small farmers be more productive, make more income, work more closely with other in their communities and improve economically distressed/persistently poor counties.

This presentation focuses on why the Federation of Southern Cooperatives believes cooperatives are the best way for socially disadvantaged farmers and other low-income rural residents to change conditions in depressed rural communities. The Federation has four decades of experience in organizing farmers and low income grassroots people into cooperatives and credit unions to make quantitative and qualitative changes in their lives and communities. Currently, there are over 70 active cooperative member groups, themselves with a membership of more than 20,000 families working together across ten southern states, with a concentration in Mississippi, Alabama, Georgia and South Carolina. This presentation will cover the history of the Federation, the principles of cooperatives, and the results achieved. In addition to agricultural cooperatives, we’ll also discuss housing cooperatives, workers cooperatives, credit unions, and collective self-help organizations. The presentation will also include the view of farmers who are cooperative members, including what it means to belong to a co-op and what it has meant to a farming cooperation.

Opportunities and Challenges Facing Agritourism Operators in California

Shermain Hardesty and Penny Leff (University of California Small Farm Program)

Purpose: Needs assessment for determining agritourism extension program priorities

Objectives: Quantify the extent of agritourism activities in California and identify major challenges that agritourism operators are facing.

Methods: After compiling a list of more than 2,000 potential agritourism operations in California, we randomly selected 750 nonwinery and 500 winery operations to survey. The questionnaire was mailed in March 2015; an online survey was also sent to 668 of the 1250 operations. We inquired about their challenges, activities offered, marketing program, profitability and future plans.

Results: 183 mailed surveys and 48 online surveys were returned; 187 respondents indicated that they currently were agritourism operators. Their primary activities were very diverse; they included: direct sales; accommodations; farm dinners; festivals and other entertainment; outdoor recreation such as hunting, fishing and horseback riding; and educational activities such as jam making and wine tasting. Direct sales generated 61% of the agritourism operations’ revenues. More than half (57%) were open between 100 and 250 days during 2014. Their most effective marketing tools were “word of mouth” and their websites. Their most significant challenges were other state and local regulations (61%), city/county zoning and permitting (56%), and insurance and management time and expertise (both 51%). Thirty-one percent made at least $25,000 in profit during 2014. Overall, 54% of the operations wanted to diversify and/or expand their operations, including 64% of those that did not make a profit.

Conclusions: Agritourism operations in California are a viable source of diversification for farms and ranches, and merit support from Extension.

Economic Outcomes and Viability of Agritourism Operations in Colorado and California

Martha Sullins (Colorado State University Extension); Shermain Hardesty (University of California-Davis)

Research goal: To understand business- and community-level factors that contribute to agritourism profitability in Colorado in order to provide education on potential business models.

Methods: In early 2015, Colorado State University Extension conducted a survey of agricultural producers, distributing an online or mailed questionnaire to agritourism businesses throughout
the state. We inquired about financial profitability of agritourism enterprises, producer success at achieving non-financial goals, perceived constraints to business success, entrepreneurial characteristics that might influence the producer’s ability to develop and maintain a viable agritourism business, and managers’ future plans for their businesses.

Results: Of the 676 surveys distributed, we received 143 responses, 101 from current agritourism operators, and 42 who were no longer involved in agritourism. The more profitable businesses, defined as those making more than $5,000 in net profit per year (where 35% of businesses reported making less than $1,000 net profit annually), spent 44% more per visitor (based on fixed and variable expenses), were open for business 43 more days per year on average, had nearly 5 times the average visitor volume, and had a more diversified visitor base (among in-state and out-of-state visitors). These businesses had twice as many out-of-state visitors, but relied less on direct sales to customers (64% focused on direct sales, compared to 80% of less profitable operations). Lastly, higher profit businesses had more robust goals of improving their family’s financial situation (79%) and creating a sales venue for their farm/ranch products (55%), compared to 56% and 31% of low-profit agritourism businesses.

**TRACK 5**

**SESSION 3 (LEVEL 2; SUITE 4A&B)**

**The Finger Lakes Meat Project: Expanding Bulk Sales of Local Meat with Innovation**

Matthew LeRoux (Cornell Cooperative Extension, Tompkins County)

The Finger Lakes Meat Project’s (FLMP) mission is to expand sales of local meat in bulk quantities (commonly called “freezer trade”). Our research shows that bulk sales are also more profitable for farmers than other channels, due to the premium pricing and low labor demands. Bulk sales are also more affordable for consumers, offering a lower price per pound than meat sold by-the-cut. The FLMP is proud to promote food affordability while preserving small farm viability.

FLMP consists of four main components: 1) Consumer educational outreach including events; 2) MeatSuite.com, an online directory of local farms selling meat in bulk; 3) 2 Meat Lockers, community freezer space for meat storage; and 4) Producer training on marketing techniques and setting prices to ensure profitability. Thus the FLMP addresses barriers to create new local meat buyers, connecting consumers and farmers, providing discounted rent-able freezer space for bulk purchases, encouraging farmers to accept payment plans, and aiding farms with marketing, including a price calculator tool.

How Federal Marketing Orders and Marketing Agreements Can Help Your Business

Michael V. Durando (USDA Agricultural Marketing Service)

When industries in the agriculture sector need to adopt industry standards, commodity groups may contact the U.S. Department of Agriculture (USDA) for help in developing a “marketing order” or “marketing agreement.” These industry-driven programs help fruit, vegetable, and specialty crop producers and handlers achieve marketing success by allowing industry members to leverage their own funds to design and execute programs they would not be able to organize alone. Each program is tailored to address the individual needs of a commodity.

Producer-supported marketing orders set regulations on handlers and can facilitate mandatory grading and inspection services to meet minimum grade levels; standardize packaging and labeling; sponsor production research projects; and create market research and product promotion activities. Marketing agreements offer similar, yet more flexible options than marketing orders; handlers can choose to adopt marketing agreements without involving producers.

These programs operate on the local or regional scale to build markets, increase consumer demand, and improve profits. USDA ensures compliance with all regulatory requirements and currently oversees 28 marketing orders.

Mr. Durando will explain the tools available through marketing orders and marketing agreements and provide examples of how these programs can be best tailored to help industries overcome and prosper in a challenging marketing environment. Marketing orders and agreements can even help U.S. produce and specialty crops industries comply with the U.S. Food and Drug Administration’s Food Safety Modernization Act regulations.

**Post-Harvest Education for the Small Farmer**

Robin Turner, Melissa Stewart and John Bombardiere (West Virginia State University Extension Services)

With farms averaging only 172 operable acres, less than half of the national average for operable farm acres according to the USDA (2014), West Virginia farms are all small farms. In order to be both successful and sustainable, these farmers must leverage every available market. They are able to do that only through knowledge.

However, these farmers are, increasingly, new farmers as veterans and extraction industry workers change focus. This often means there is little to no knowledge of post-harvest techniques, from pre-cooling, packaging and transportation of commodities; knowledge that increases quality of marketable produce and broadens the reach of marketing endeavors beyond a few miles' radius of the farm.

West Virginia State Extension Services has created a cold-chain initiative to provide education modules, supplies, and practical, low-cost solutions farmers can implement themselves through small, regional partners. By providing education and low-cost solutions to pre-cooling, packaging, and preservation techniques, small farmers learn to increase the shelf-life and quality of their product as well as increase efficiency and food safety from harvest to market. In this presentation, learn how the initiative was organized, what modules are taught and what technology implemented, as well as how the initiative aims to create cooperative market extension through shared mobile units.
Beyond Fresh and Direct: Exploring Specialty Food Market Opportunities for Small and Medium-sized Farms

Larry Lev, Robert P. King, Jan Joannides, Shermain Hardesty and Gail Feenstra (Oregon State University)

Small and medium-size farmers are important because of their contributions to economic, social, and environmental sustainability. Most of these farmers, however, can’t compete with larger producers in producing bulk commodities and while some have been successful selling fresh products through farm-direct and intermediated markets (such as sales to retailers and restaurants), those niches are quite limited. The “Beyond Fresh and Direct” Project explores the opportunities and challenges that small and medium-size farms encounter when they seek to enter the rapidly-growing specialty food marketplace. This sector consists of “…foods that exemplify quality and innovation, including artisanal, natural, and local products that are often made by small manufacturers, artisans, and entrepreneurs.” Small and medium-size farmers can participate in these value-added opportunities in three ways – as food manufacturers themselves, by using co-packers, and as ingredient suppliers to specialty food manufacturers. We examine all of these possibilities for four broad ingredient categories (dairy, meats, grains, and fruits and vegetables). Through surveys and interviews we have determined that the key advantages that smaller farmers can provide include higher quality, traceability, reliability, and trust. Many of these benefits can be leveraged in marketing messages that carry farmer stories through to consumers. The most significant challenges of sourcing from these farmers include assuring a year-round supply, higher cost, and meeting food safety standards. A set of brief case studies will highlight these lessons learned. The bottom line is that the expanding specialty food market provides an attractive outlet for some small and medium-size growers.

Marketing Alternative Agriculture Commodities

Helen D. Brooks (Alcorn State University)

The demand for more fresh fruits and vegetables; the increasing need for Farmers Markets, both locally and throughout the United States, allows the opportunity to market fresh fruits and vegetables as an added/value (Alternative Agriculture Commodity) in the Southwest Mississippi. The demand for alternative agriculture has increased because families are eating healthier and looking for items that are locally grown. Therefore, there is a need to train small local farmers how to visually market their products so it can be appealing at a distance when selling at the local farmer’s markets. In addition to preparing them to sell at the market, they will be introduced to SAFS (Simple, Attractive, Packaging, Sells) Project.

• Simple – because it’s clean and of quality, readable information and conforms to states regulations
• Attractive – because it shows that you gave quality time to show that caring has gone into how your product(s) look.
• Packaging – shows that you selected the appropriate bags, jars, containers, bottles etc… that best fits the product.
• Sells – the end results of Simple Attractive Packing (S.A.P.)

Rural Development’s Rural Business-Cooperative Service

Michelle Wert (USDA Rural Development’s Rural Business-Cooperative Service)

Rural Development’s Rural Business-Cooperative Service (RBS), the Natural Resources Conservation Service (NRCS), and the Farm Service Agency (FSA) are committed to working collaboratively to maximize and support participation in USDA’s energy-based programs. The RBS/NRCS/FSA Cross-Promotion of Programmatic Services will expand knowledge of USDA programs, assist agricultural producers to find financing, as well as other resources for renewable energy and energy efficiency improvements for their operation. Presented information will include the Environmental Quality Incentives Program (EQIP), the Rural Energy for America Program (REAP), the Farm Storage Facility Loan Program, and the Microloan Program.

Linking Multifunctional Agri-enterprise Development to Small Farm Opportunities

Kathleen Liang (North Carolina A&T University)

This presentation will share a pioneering effort in the US using a census-approach survey in New England region to (1) explore implications of multifunctional agriculture (MFA) and off farm income on small farm viability, (2) identify opportunities and challenges for small farms to engage in multifunctional operations such as agriourism, value added, and direct sales, and (3) discuss economic, social, and environmental impacts of MFA on small farms and their communities. Results show most New England farmers are middle age or older, male, well-educated and have middle to high incomes from off farm employment. This same group also farms small acreages, have low sales and have a third have losses from their
farming activity. However many farm households choose to practice MFA given their willingness to connect with local communities and customers, passion and belief in preserving agricultural landscape, and commitment in agricultural education and services beyond offering traditional food and fiber. There is a benchmarking point when small farms making decisions in participating in MFA, and it depends on resources such as labor, time, and policy constraints. The MFA strategies seem to support farm income, the off farm jobs also offer supplemental income to farm families, and the types of off farm jobs sustain a variety of opportunities for other families in communities. The research also leads to mixed results whether encouraging MFA would directly add employment or new opportunities to improve economic mobility for farm households and non-farm households in a community.

TRACK 6
SESSION 1 (LEVEL 2; SUITE 2E)
Advancing Equity in the Next Farm Bill - Linking Agriculture and Food to Community Food Sovereignty

Lorette Picciano (Rural Coalition); John Zippert (Federation of Southern Cooperatives); Savi Home (Land Loss Prevention Project)

In the past several farm bill debates, advocates have made great strides in securing policies to advance equity for historically underserved and veteran farmers and ranchers. As a result of these changes, the number of farm operators who come from historically underserved communities has increased by 28,000 between the 2008 and 2012 Censuses of Agriculture. The collaborators believe that increased support to strengthen agriculture and food systems in rural communities represents a viable option to expand rural development in the many rural areas with persistent high poverty. This interactive presentation will review equity provisions and outcomes in previous Farm Bills and especially in 2008, and will lay out emerging proposals for the next farm bill debate in 2018 for input and discussion. Improvements such as FSA microloans (with more than 18,000 approved) and NRCS funding for high tunnels (with over 11,000 funded and installed) are among the outcomes of previous work. Suggested improvements now under discussion include proposals for increased business and food system investment, particularly in rural communities with persistent high poverty, and expanded support for outreach and expanded assistance to access and equity to underserved farmers and ranchers and farmworkers, and to support the community based organizations and other entities that are essential to this work. This interactive session will provide advocates and interested farmers and ranchers the opportunity to review and expand an equity platform.

The Fauquier Education Farm: A Highly Successful Public/Private Partnership

Jim Hankins (Fauquier Education Farm)

The Fauquier Education Farm is a 501(c)3 non-profit with the stated mission to support agriculture education and promote social responsibility within the community. We cultivate 10 acres of mixed vegetables on land owned by local government. Using these crops as an outdoor lab and demonstration farm we host a wide range of education programs to showcase agricultural and conservation best practices. We hold a free workshop series on production and conservation topics and also host three separate multi-week Beginning Farmer training sessions. The Education Farm could not exist without building strong collaborations with local, state and federal agencies, such as the Va. Cooperative Extension, several area Soil and Water Conservation Districts, NRCS, the Va. DCR, Va. Tech and Va. State Universities and the Va. Beginning Farmer and Rancher Coalition. As a non-profit our funding comes only from grants and donations. We work extensively within the non-profit community to secure funding and build collaborations. The Education Farm is run with one paid employee with all other labor provided by volunteers. Our volunteers come to the farm to gain a direct hands-on learning experience for themselves and their families, and to give back to the community. All of the produce grown on the farm is donated to support local food banks, in 2016 that was 38,780 pounds of fresh, high quality produce. This talk would center on building collaboration and effective bridging between public and private entities to build community, support agriculture education, and provide quality food to those most in need.

Farmers Forum: A Platform for Farmers Sharing Innovation

Beth Nelson and JoAnn Benjamin (North Central Region SARE); Dan & Julie Perkins (Perkins’ Good Earth Farm)

USDA-NIFA’s national Sustainable Agriculture Research and Education (SARE) program has always emphasized farmer engagement in projects. In addition to supporting innovative projects in which farmers generate new information, we also need to support them in extending that knowledge and sharing their results. In multiple surveys, farmers have expressed a preference to learn from other farmers. Our role should be to facilitate farmer to farmer networks and other group processes to help farmers and experts learn from each other.

Farmers Forums offer that opportunity. The North Central Region (NCR) – SARE program’s Farmers Forum is an event that gives farmers, ranchers, and others the chance to share new information about sustainable agriculture practices based on findings from their own NCR-SARE grant projects. These presentations focus on research, demonstration and education projects led by farmers that promote profitable practices that are good for the environment and community. The Farmers Forum happens annually, and rotates around the region by collaborating with existing conferences. Eight to ten projects are presented, summaries of projects are compiled in an annual Farmers Forum Highlight print and online publication, and videotaped presentations are available on the NCR-SARE YouTube Channel. Through the Forums, NCR-SARE builds relationships with organizations throughout the region. These Forums often bring in speakers who may not have been associated with the conferences previously, building and creating networks around specific topics, leading to future collaborations and innovation.
Cultivating Success™ Idaho: A Collaborative, Multi-dimensional Approach to “Growing” A New Crop of Small Acreage Sustainable Farmers and Ranchers Statewide

Ariel Agenbroad, Iris Mayes and Cinda Williams (University of Idaho Extension); Colette DePhelps (Rural Roots)

Idaho is a geographically large state, 83,570 square miles and 44 counties, much of it rural with a few concentrated metropolitan centers. Our small farmers and ranchers are critical to resiliency in rural areas and necessary to local food access in urban sectors. However, while multiple University of Idaho Extension faculty members across the state have percentages of responsibility in small farms programming, the total is less than 3.92 FTE. How do we develop high quality, consistent education, outreach and support for small farms while attending to multiple programs and priorities? By embracing technology that connects, not isolates, by recruiting farmer and advocate partners who deeply understand the needs and preferences of our audiences, and creating a statewide culture of collaboration and communication. Idaho’s comprehensive beginning farmer program, Cultivating Success™, focuses on increasing the number and success of beginning small farmers and ranchers. As a collaborative partnership between University of Idaho Extension and Rural Roots, Inc., an Idaho nonprofit organization serving sustainable small farmers, Cultivating Success™ goals include basic production, marketing and financial education for new farmers, facilitating access to land, capital, and decision-making tools, and strengthening farmer-to-farmer mentoring. In early 2016, with funding from USDA NIFA, Cultivating Success™ launched a concurrent, multi-part hybrid course, delivered live via webinar, in-person facilitation and tours to 170 individuals at nine different sites. Multi-stage evaluations of participants and team members revealed valuable lessons learned about team capacity, effectiveness of delivery methods on meeting learner goals and objectives, and highlighted early indicators of impact.

Learning off the Land: Developing Collaborative Farm Internships for Washington State

Kellie Henwood and Laura R. Lewis (Washington State University)

Washington State University's Cultivating Success (CS) is an educational program that provides interdisciplinary study and practice of sustainable agriculture for new and beginning farmers and ranchers. One aspect of the CS program is on-farm internships that are facilitated through WSU. This presentation’s focus is on collaborative internship models in Washington State. Our collaborative program matches new and beginning farmers with experienced host farmers for three to nine month periods. Each collaborative farm internship program works directly with WSU Extension to access and develop curriculum for their interns, bringing in WSU research faculty and utilizing local educators. Upon completion of the program, interns receive Continuing Education Units through WSU. Since 2010, WSU Extension has had over 70 interns graduate from the program. Graduates are surveyed annually to measure the impact of the farm internship program on their professional activities as well as other outcomes from participation. Results from analysis of survey data demonstrate the strength and success of the program, with the majority of graduates being employed in the food and farm sector (61%). Additionally, the program has been able to recruit interns from more than 20 states, with a 38% retention rate in WA State after completing the program. WSU Extension is expanding the collaborative farm internship model into more regions across the state to support new and beginning farmer and rancher education while also recruiting and retaining new food and farm professionals into rural communities.
The Niche Meat Processor Assistance Network: A Collaborative, Value-Chain Approach to Local Food Infrastructure

Lauren Gwin (Oregon State University Center for Small Farms & Community Food Systems)

Over the last decade, a steady increase in consumer demand for sustainably- and locally-raised meat and poultry has created new market opportunities for livestock producers. Small- and mid-scale processors are essential links in those value chains, providing the slaughter, cutting, further processing, packaging, and other services producers need to meet market demand. Processing is an operationally complex, heavily regulated, and typically thin-margin business. Livestock producers, who face their own complexities and costs, can find processing frustrating. Cooperative Extension, which typically serves producers or processors directly through applied research and education, also has an important role to play in connecting the links in the chain.

We created the Niche Meat Processor Assistance Network (NMPAN) in 2008 as a national, Extension-based network focusing attention and support on the small- and mid-scale processors who are essential to bringing sustainable meats to market. NMPAN is an information hub and forum that connects processors, producers, input and equipment suppliers, other meat value chain businesses, public agencies, nonprofits, and universities: our community includes 44 Extension professionals in 39 states. NMPAN offers credible, research-based information and guidance through our Website, webinars, newsletter, peer consulting program, and the NMPAN Listserv. NMPAN is also an eXtension Community of Practice.

NMPAN offers a valuable and vibrant example of Extension using a collaborative, value-chain approach to food system development. Our presentation will cover learn how NMPAN was developed, what we do, whom we serve, what we have learned over the last nine years, and where we are headed.

TRACK 6
SESSION 3 (LEVEL 2; SUITE 2E)

Patriot Guardens

Melissa Stewart (West Virginia State University Extension Services)

Patriot Guardens is an initiative between the West Virginia National Guard (WVNG), West Virginia State University (WVSU) Extension Service and the West Virginia Department of Agriculture (WVDA) to pool resources that will create a system to assist West Virginians, particularly but not limited to veterans and guardsmen, in building agricultural businesses. In addition, the program will work to support veterans with PTSD and substance abuse, while transitioning West Virginians recovering from substance abuse back into workplace opportunities. The goal of the program is to build enough capacity to become self-sustaining through revenue streams from the sale of food, educational workshops and event hosting. The initiative looks to develop, in phases, Ag incubator programs for delivery out of WVNG Armory locations while simultaneously creating a golden delicious apple project to increase apple production in the state.

In this presentation, participants will learn how the concept originated and was initiated through numerous grant awards. The program development and implementation will be discussed as well as future plans for further development of this pilot program to be replicated throughout the state. This program will be presented by Melissa Stewart with WSVU Extension Service and a representative from the WVNG.

Enabling Networking with Economic Developers and Planners with a Local Farm and Food Profile

Noah Ranells, Laura Lauffer and Enoch Sarku (North Carolina A&T State University)

Land use policies, consolidation, and a desire to lure larger industries to communities can place pressures on local agriculture and prime farmland. As a result, the value of local food systems in a community may be overlooked by economic development and planning staff and elected officials may not be aware of or able to easily obtain information on the benefits of a local food and farming system. Yet, consumers are increasingly interested in purchasing from local producers as evidenced by the growth of CSA’s and direct to consumer sales. These marketing channels are essential to a resilient local food system and exert a positive multiplier effect in the local economy. The Local Farms and Foods Profile presents readily available data from the USDA Ag Census in a user friendly infographic that highlights county farming and local food system trends. The profiles are designed for all 100 North Carolina counties and sixteen regional councils of government and serve to catalyze discussions among stakeholders on the topic of agriculture as economic development. Agriculture educators and advocates, and farmers play a vital role in starting these conversations; these profiles can serve as a tool to support local food systems and boost economic development. Two case studies will be presented from North Carolina as examples of successful engagement of economic development and planner collaboration with Ag professionals.

Tricks of the Visual Delivery Trade: Bringing Expertise to the Small Farmer with One Click

Priya Jaishanker and John Munsell (Virginia Tech)

Opportunities to distribute educational materials are limitless with the internet at our fingertips, but how do we cut through the deluge of information to position gems of expertise? How do educators and extensionists meaningfully share material in the competitive era of search engine algorithms and social media frenzy? More than two years ago, we embarked on a mission at Virginia Tech to film experts and advanced forest farmers. Our goal was to capture proven processes and competitively deliver educational online videos that summarize techniques, provide insights, and promote products. We wanted to publicly disseminate quality information from trusted forest farming experts. Through the camera’s eye, we highlighted forest farming using creative cinematography. What we have learned is that competitiveness and process involve much more than simply filming. Referred to as the “six Ts,” (1) Tips and (2) Topics relate to

ORAL PRESENTATIONS
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Enterprise diversification is one of the most commonly used risk management strategies by agricultural producers in the U.S. Growers, large and small, are constantly searching for crop or enterprise alternatives they can add to their production mix to increase their revenues. In addition, they are always looking for technologies or production systems that make their farms more efficient and more economically viable. However, identifying and evaluating new or specialty crops and assessing the impact of new technologies or production systems on farm profitability is a difficult and intimidating task for producers. The challenges and the risks involved are even greater for small-scale agricultural operators who may have only limited access to resources and information and operate under higher uncertainty.

Our workshop will help participating producers make better decisions about these issues by (1) Providing an overview and discussing the opportunities and challenges with specialty crop selection, production, and marketing strategies to maximize profit potential for small-scale growers. (2) Discussing issues and opportunities related to innovative production systems including organic, hydroponic, vertical, and container growing systems for high value specialty crops including vegetables, strawberries, blueberries, blackberries, pitahayas or dragon fruit, passion fruit, and many other fruits. (3) Discussing enterprise selection strategies and discussing electronic tools we have developed in collaboration with Right Risk, LLC. to help farmers evaluate crop alternatives and to assess the effect that new production practices or technologies may have on the overall profitability of their farming operations.

A Cohort-Based Approach to Supporting Farmers in Measuring Costs, Making Informed Business Decisions, and Enhancing Farm Viability
Tanya Murray (Oregon Tilth/Oregon State University Center for Small Farms & Community Food Systems)

The Oregon State University Center for Small Farms & Community Food Systems, in partnership with Oregon Tilth, Inc., has developed a program to support farmers with determining their operations’ crop-specific costs of production. The Cost Study Program is part of a larger, USDA NIFA-funded project focused on developing advanced instructional curriculum that addresses farmers’ needs for business development skills required to create viable farm businesses that last. In this workshop, we will describe the approach that we have designed for farmers to use to track and estimate crop specific costs of production as well as the ways that we are supporting farmers with getting this record keeping done. We will also provide a preview of the instructional curriculum we are developing that helps farmers use the information gained from the Cost Study Program to make more informed decisions about pricing, production practices, crop mix, market channel mix, and scale. Our overall goal is enhanced profitability and long-term viability for these farm businesses. Sharing our experience will provide stakeholders from land grant universities, state or private colleges with agricultural programs, nonprofits, government, foundations, farm leaders, and collaborators with insights into what we have learned from the development and

The Beginning Farmer Resource Network of Maine
Tori Lee Jackson (University of Maine Cooperative Extension)

The Beginning Farmer Resource Network (BFRN) of Maine is a coalition of agricultural agencies and organizations working together to connect aspiring, beginning, and transitioning farmers to resources for farm business success. Members include UMaine Cooperative Extension, Farm Credit East, Maine Farmland Trust, Farmer Veteran Coalition, Maine Organic Farmers and Gardeners Association, USDA Farm Service Agency, Maine Farm Bureau, among others.

The network formed in the summer of 2012 following a Sustainable Agriculture Research and Education funded workshop called Reading the Farm. Agricultural service providers visited farms as a group and made recommendations based on their areas of expertise. It was a very useful experience for the participating farmers and a revelation for the service providers. Each learned so much from the others over the course of those two days that before leaving, plans were made to meet regularly to become better-informed service providers.

Rather than a formal legal structure, BFRN operates on collective good will and the support of our respective agencies and organizations. The network maintains a website that serves as a “one-stop” resource for beginning farmers and offers information on topics including: acquiring land, how to farm, conserving natural resources, planning and managing your business, financing, regulations, marketing, and more. It also provides information on upcoming events and workshops. Members meet six times each year and collaborate on workshops presented for beginning farmers at the Maine Agricultural Trades Show each January. In 2016, there were forty-three BFRN-sponsored workshops over two days.
implementation of the Cost Study Program thus far. We will draw on the expertise of our audience and solicit input that we will use to shape the future development of the program.

From Barley to Drink: A Guide to Farm-Based Breweries and Distilleries

James Matson, Julia Schlosser and Jessica Shaw (Matson Consulting); Chris Cook (VAFAIRS)

The United States is in the midst of a farm based brewing and distilling revolution. Craft brewers are capturing an increasing segment of the market with their smaller batches of high-quality, artisan beer. Small Farms are uniquely positioned to participate in this value added process.

This seminar presents the results of a recent study of a farm based craft malting and brewing operation that has moderate financial resources. The report will present: information on the brewing and distilling industries, business factors- basic plant layouts, packaging and labor requirements, general regulatory processes, as well as industry examples. It will also outline the start-up procedures and a financial model for a typical farm based business, including sensitivity scenario assessments.

**TRACK 7**

**SESSION 1 (LEVEL 2; SUITE 3E&D)**

Local Food System Development: A Viable Economic Development Option for Distressed Areas

Cary Junior (SouthEast Michigan Producers Association)

Food systems should be an integral part of local economics. Knowledge of local food systems in underserved communities is still scarce, so understanding the significance of them in these areas is still nonexistent. Food hubs are an essential “middle” component of a food system. Implementing a local food system could have an immediate economic impact on underserved areas by providing entrepreneurial and employment opportunities. SEMPA is and producer cooperative of small/African American Farmers who seek to build their capacity and develop a local food system to supply food insecure areas in the Detroit, MI area.

Small Farmers, Risk Management and Navigating the Local Food Economy

Annette Hiatt (NCABL Land Loss Prevention Project)

In times of economic challenge, maintaining and growing a farm enterprise requires a balancing act that embraces both risk-taking and prudence. The Land Loss Prevention Project, through its SmartGrowth Business Center, assists limited-resource and socially disadvantaged farmers in North Carolina in achieving that equilibrium, providing legal consultation and outreach on business issues and agricultural entrepreneurship. In a state where more than 3/4 of the family farms are characterized as small family farms and the average age of principal operators is 58, according to the USDA's 2012 agricultural census, sustaining a farming economy must encompass risk management and must treat even the smallest farm as a potentially robust and innovative business engine within the community.

The Land Loss Prevention Project is a non-profit law firm in Durham, North Carolina providing limited resource clients across the entire state with legal representation in issues involving land preservation and utilization. Many of our farmer clients are small producers, but could have a key role in improving the health of their communities if the local markets are present and thriving. We would propose a presentation on legal risk assessment and prevention for small farmers, business planning, and infrastructure development for farmers attempting to navigate the local food economy as well as the challenges and successes in working to build local opportunities for marketing.

**Is it Really a Food Desert: An Investigation of Food Access in Petersburg Virginia**

Marcus M. Comer (Virginia State University)

Many impoverished neighborhoods across America are considered to be located in a “food desert”, a neighborhood void of grocery stores and access to fresh food. Many believe this categorization is inaccurate and view it as an unfair stigma, because most study’s only count major grocery stores and do not count corner stores, bodegas, or private farmer’s markets. This study investigated Petersburg Virginia, a southeastern city that bares this stigma of being a food desert. Using geographic information system (GIS) technology, every store within the municipal boarders that sells food of any kind was mapped. Each store was physically visited to determine what types of food they offered, and a listing generated. The purpose of this study was to determine if Petersburg is indeed a true food desert by (1) generating a GIS map of every venue that retails food, (2) Generate a listing of all food and types offered at retail venues in the city of Petersburg, (3) Create a phone app that utilizes GIS technology to provide consumers the ability to find food in Petersburg. It is expected that this study will find that improvised neighborhoods in Petersburg have access to fresh food but it does not get reported. In addition the findings of this study will be useful for municipalities to determine a truer picture of food access issues. The phone app will be a useful tool for consumers to find retail food venues.

**SESSION 2 (LEVEL 2; SUITE 3E&D)**

Removal of Nitrogen and Phosphorus from Agricultural and Municipal Wastewaters

A. Atalay, O. Oyewole, and B. Whitehead (Virginia State University)

The use of phosphorus and nitrogen in animal feeding operations, manure and chemical fertilizer applications on agricultural land, and municipal as well as industrial wastewaters have contributed a great deal to the eutrophication of surface water. Application of manure
slurries to crop land leads to high levels of phosphorus and nitrogen in receiving rivers that negatively impact aquatic animals. Municipal wastewater treatment plants remove these nutrients from domestic and industrial waste through a network of procedures. Controlling the discharge of phosphorus and nitrogen from wastewater is a key factor in preventing eutrophication of surface waters. This research project developed a chemical precipitation method that removes over 90% of phosphorus and up to 25% of nitrogen from both synthetic and domestic wastewaters. The objective of the study is to investigate the precipitation of nitrogen and phosphorus from wastewater as a value-added mineral known as dittmarite, a chemical compound found in nature. Both laboratory and pilot-scale processed will be conducted to generate significant quantities of the mineral. Once produced dittmarite can be used as a fertilizer additive for greenhouse and field crop productions. The chemical composition of dittmarite is such that it contains nitrogen, phosphorus and magnesium in sufficient quantities for proper plant growth. Dittmarite is produced as a wet precipitate through chemical reactions in the wastewater treatment process; which can be dried for proper handling and utilization. Municipal wastewater treatment plants, high quantity fish producers, and confined animal operations (CAFO) can benefit from this technology for handling on-site waste waters.

Small Farms, Sustainability and Environment: Current and Future outlook

Srinivasa Rao Mentreddy (Alabama A&M University); Ali Mohamed and Denis Ebodaghe (USDA-National Institute of Food and Agriculture)

Small Farms make up for 90% of the nation’s farms and control a significant share of farm assets. However, most of the small farms are not subjected to the EPA Concentrated Animal Feeding Operation regulations and its comprehensive nutrient management planning requirements. Often, they do not take advantage of assistance programs because of a lack of awareness or an inability to contribute requisite matching funds for capital improvements. Many of these farms operate in rural and urbanizing areas close to high density residential areas and water resources. The amount of land per animal unit is typically very small, resulting in problems with manure storage, handling and use. When improperly managed, these farms may contribute excess nutrients, bacteria and other pathogens, organic matter, sediments and odors to the environment. Strategies to address these issues must be developed to ensure that small farm communities will minimize the negative environmental impacts. Concentrated animal feeding operations need to be properly contained if environmental risks on small farm communities are to be minimized. Animal waste is disposed of in limited amounts of farmland with the mindset of improving soil fertility and soil nutrients. Soil erosion, greenhouse gas emission from fossil fuel use, pesticide drift from spraying, over fertilization can all result in negative impacts on the environment.

The Environmental Protection Agency and the U. S. Department of Agriculture have developed strategies and programs for pesticide safety and management. USDA-National Institute of Food and Agriculture (NIFA) funded projects do provide information to farmers on the proper use of pesticide and the implementation of EPA’s Worker Protection Standard, for e.g., the NIFA-funded website Farm Answers.org: https://farmanswers.org/ and the NIFA Land-grant university partner website, Pesticide Environmental Stewardship: http://pesticidestewardship.org/Pages/default.aspx. Additionally, NIFA competitive grants programs, such as the Beginning Farmers and Ranchers Program and the Crop Protection and Pest Management Program, provide funding opportunities for research, education and outreach activities in pesticide safety including the development of training modules focused on proper pesticide usage, equipment calibration, and application methods to reduce environmental hazards. https://nifa.usda.gov/program/crop-protection-and-pest-management-program

The Dry Farming Collaborative: Growing Without Irrigation in the Maritime Pacific Northwest

Amy Garrett (Oregon State University); Heidi Noordijk and Dana Kristal (OSU Extension Small Farms Program)

Farmers in the Western United States are becoming increasingly affected by climate change through reduced snowmelt, increased temperatures, and. Up to a 50% reduction in summer water availability is predicted in Oregon within 50 years, and many Oregon vegetable farmers using surface water for irrigation were cut off early during the growing season in 2015. In addition, many new farmers have trouble finding land with unrestricted irrigation rights. It is becoming critical for the viability of farms in our region and the security of our food system to increase our knowledge and awareness of drought mitigation tools and strategies for growing with little or no irrigation. The Dry Farming Collaborative is a group of farmers, extension educators, and agricultural professionals partnering to increase knowledge and awareness of dry farming management practices with a hands-on participatory approach. This project launched in 2016 with three Dry Farming Demonstrations at OSU Extension sites as well as six on-farm trials throughout Western Oregon. Learn about how Oregon farmers and OSU Extension Service Small Farms Program are collaborating to increase knowledge and awareness of dry farming management practices for growing a variety of vegetable crops without irrigation in the maritime Pacific Northwest. For more information visit the Dry Farming Collaborative Facebook page or the Oregon Small Farms website (http://smallfarms.oregonstate.edu/dry-farming-demonstration).

Increasing Agroforestry Based Ecosystem Services and Farm Productivity of Marginal Farmers through Intercropping of Loblolly Pine and Switchgrass

Anand Kumar and Solomon Haile (Tennessee State University)

Adoption of advanced climate change mitigation approach is an immediate concern before the present community to avoid the widening gap between inter and intra-generational equity. Depletion of the SOC pool on agricultural soil is exacerbated by exhaustive
land use pattern and deforestation and in turn also exacerbates soil degradation. The rapid loss of SOC doesn’t only enhance atmospheric concentration of CO₂ but subsequently, decreases soil fertility. Carbon dioxide (CO₂) is primarily responsible for global warming, and the increase in atmospheric CO₂ concentration has been caused by the combined impact of population growth, industrial expansion, exhaustive land use pattern and deforestation. Agroforestry provides a sustainable alternative to shifting agriculture and to single crop system because of its potential to help restore degraded or marginal lands. Intercropping of Switchgrass (Panicum virgatum L.) within loblolly pine (Pinus taeda) stands offers potential synergy for biomass production and C sequestration on degraded land. Tennessee is endowed with about 14.5 millions acre of forestlands. Over 77% of the forest area is considered on-industrial private lands, of which more than 64 percent of the owners have less than 4 hectares forest holdings. The integrated ecosystem services and economic feasibility of this intercropping can be the potent solution for the marginalized farming community and degraded land of southern U.S. The undergoing research at the Cheatham Educational and Research Centre of Tennessee State University has critically tested the biomass productivity and C sequestration potential of the intercropping system of the aforementioned plants. The data has shown the economic viability and unparallel ecosystem services. The research shows that pure strand would require 25-74% more land to produce the same amount of yield relative to intercropping system. Additionally, the deep-rooted crops with the capacity to produce high biomass (50% root biomass below 30 cm) and with perenniality, may enhance the organic C content of deeper soil horizons. The extent of C sequestrated in any agroforestry system highly depends on a number of site-specific, biological, temporal, climactic, soil and management factors. Very few studies have quantified the amount of C sequestrated under the intercropping of the plants with divergent growth habit and architecture. These findings of this research will help millions of marginal farmers in the southern U.S to shape their economic stability along with enduring ecological benefits. Assessment of the effects of intercropping Switchgrass with loblolly pine on C sequestration will essentially contribute to determine environmental and economic sustainability for wider geographical areas in marginal lands of river banks.

**TRACK 7**

**SESSION 3 (LEVEL 2; SUITE 3E&D)**

**Enjoying the Essence of Regenerative Agriculture**

*Ngowari Jaja (Virginia State University)*

Striving to provide food and nutrition for the growing population in the 21st century has led to various methods that seek to increase agricultural production. However, these methods which include the use of different grades of inorganic fertilizers, pesticides, herbicides and other amendments have become soil and environmental contaminants that invariably affect the health of humans. One of the most effective methods to rectify this problem, restore the health of the soil and the environment, protect our health and build a sustainable economy is through regenerative agriculture. Regenerative agriculture embraces an array of techniques, including animal husbandry that rebuild the soil, sequester carbon into the soil, reduce greenhouse gas emissions and increase the soil’s ability to function as nature intended. These techniques which advocate the use of cover crops and perennials, and graze animals in the open can build organic matter into the soil’s humus layer which is essential for growing the nutrient - rich, healthful foods humanity needs as well as reduce the toxic levels of pollution and other environmental problems: it stops soil erosion and degradation, air and water pollution, loss of biodiversity, and protects the purity of groundwater, reducing damaging pesticide and fertilizer runoff. Practices that build and restore soil health will be explored as farmers and producers are given the tools and knowledge needed to increase crop quality and yield with a simplified management prospectus. Regenerative agriculture will bring us back to where we get to enjoy the essence of farming the way nature intended.

**Improving and Protecting Soils, Building Your Farm, and Sequestering Carbon with Value-Added Biomass Products**

*Harry Groat, Katie Femholz, Scott Bagley (Dovetail Partners)*

A suite of products from value-added biomass is being used currently to improve soils, protect and stabilize soils, and to generate building products in NM and AZ. The technology is appropriately scaled, highly adaptable to biomass feedstocks, and requires only modest capital. Any of the three products can also be developed into free-standing part-time businesses for additional income opportunities. All the products sequester carbon for intermediate to long-term periods.

A suite of products - Chipcrete for building systems, Zerosion (patent pending) for erosion control systems, and biochar primarily as a soil amendment - is currently in production as part of the USFS Coronado National Forest’s Pinaleros Ecological Restoration Project in Safford, AZ by Restoration Technologies (RT) from Silver City, NM. All three products use low value woody biomass as their common feedstock and the USDA Forest Service, Wood Education and Resource Center (WERC) has awarded funds to deploy the business and technology details for this value-added woody biomass-based product suite. This presentation will address the key elements of the product suite, including feedstock types, manufacturing systems, costs, and market opportunities. Also included will be a mobile biochar retort developed in the UK, being manufactured in OH, and used in VA, TX, CO, and KS with a diverse palette of biomass.

**The Scientific Justification of Companion Planting**

*Justin Duncan (National Center for Appropriate Technology)*

All too often extension professionals are too quick to dismiss companion planting as an old wives’ tale to the frustration of organic farmers and gardeners who know otherwise. Agriculturalists around the world have extensively research various aspects of companion planting. This presentation methodically describes the systems employed and the concepts involved in successfully
using companion planting to ameliorate cyclical and seasonal pest problems. Organic producers understand that it takes more than just spraying chemicals all over everything to get a result. They instead employ systems approaches that incorporate the will of Nature into their farm scheme. Just as we know Nature abhors a vacuum it also loves diversity and Companion Planting proactively combines diversity with productivity to prevent insects from becoming pests in the first place.

Topics covered crop compatibilities, aspects of trap-cropping, symbiotic nitrogen fixation, weed suppression and other relevant topics that research has shown to be effective in many varied situations. Time permitting, we will also discuss the production of botanical formulations from companion plants.

Shade Effects on Forage Nutritive Value and Ergot Alkaloid Concentrations: Implications for Silvopasture Use
Kelly Mercier, Chris Teutsch, John Fike and John Munsell (Virginia Tech); Gregory Frey (USDA Forest Service, Southern Research Station)

Decreasing irradiance may reduce the growth of some pasture species, influencing competitive relations and forage quality. Tall fescue is infected by an endophytic fungus that produces alkaloids that are potent vasodilators; their consumption increases body temperatures and heat stress and reduces conception rates in cattle. Tall fescue toxicosis costs the livestock industry over $1 billion annually. Incorporating trees into pasture systems may benefit animal performance and could potentially mitigate forage toxicosis through some combination of several mechanisms that could act by diluting the toxin or altering nutritive characteristics resulting in reduced toxin production. Our purpose was to determine the effects of shade level and mixture diversity on sward nutritive value and alkaloid concentrations. A randomized complete block study with four replications was conducted near Blackstone, Virginia. Forage mixtures of varying complexities were planted in early April, 2015, and grown in the open (control) or under slatted shade structures that created light levels of 25, 50, and 75% of full sun. Plots were harvested twice during 2015 and analyzed for nutritive entities using NIRS and ELISA. In the first harvest, open-grown forages had greater nutritive characteristics (lower (P<0.412) ADF and NDF concentrations, and greater (P<0.001) TDN), but shade grown forages were superior at second harvest (lower (P<0.002) ADF, higher (P<0.001) CP, and higher (P<0.002) TDN). Nutritional changes by harvest indicate forage response to shade or microclimate, which varied by season, with less emphasis on mixture complexity. Data also will be presented on ergot alkaloid responses to these variables.

Sorghum: A Low-Input Alternative Crop for Small Farms
Maru Kering, Laban K. Rutto and Vitalis Temu (Virginia State University)

In light of developments that have negatively impacted tobacco profitability, resource starved producers in Virginia and beyond need an alternative low input, low risk and easily marketable crop. Increasing incidences of sub-optimal rainfall and rising temperatures also increase the risk associated with production of traditional crops like corn and tobacco. These crops demand costly investment in production resources like fertilizer and irrigation for optimum yields. Therefore, to ensure profitability of cropping operations, drought tolerant crops need to be included in farming enterprises. Sorghum (Sorghum bicolor (L.)) is a hardy cereal crop that is able to use water and nutrients more efficiently under drought conditions to produce good yields. US Grain Council statistics indicate that USA is the world largest producer of grain sorghum for foreign markets. However, there is also increasing local demand for pet and bird food, as a corn substitute in animal feed, and starch source for food and brewing.
The expanding US bio-energy industry also provides market for sweet sorghum. The extracted sugar-rich juice is easily fermented to ethanol or used to manufacture sorghum spirits and syrup. Bagasse, a left-over material from juice extraction can be chemically treated to release more soluble sugars, burned for heat energy, or used as an alternative forage-source for farm animals. Studies carried out at Virginia State University in recent years to evaluate local productivity of both grain and sweet sorghum varieties show promising results. Satisfactory yield potential and readily available markets make sorghum a viable crop for low income producers.

Growth and Yield Response of Eragrostis tef to Mid- and Late-Season Harvest Regimes

_Vitalis Temu, Ariel Coleman and Maru Kering (Virginia State University)_

A growing population of Ethiopians in America has increased demand for teff (Eragrostis tef), and created economic opportunities for producers in the mid-Atlantic region. This Ethiopia’s fast-growing drought-tolerant warm-season annual small grain, with a complete amino acid profile, unusual riches of iron and calcium is a gluten-free healthy alternative for celiac disease patients. However, agronomic challenges its dual-purpose production need attention. Effects of mid-season forage harvesting on regrowth and flowering of brown and ivory teff were studied at Virginia State University, with replicate sites in Halifax and Suffolk counties. Matching brown and ivory teff plots (1 × 2 m) were seeded (about 0.5-cm deep) in 30-cm wide rows and compacted in a randomized complete block design. Immediate after-planting rains favored uniform seedling emergence and growth. At VSU, mid-season forage biomass was cut (about 15-cm height) and regrowth monitored through bi-weekly sward heights and percent flowering. After seed maturity, regrow and intact biomass and grain yield were assessed. From other locations, only one full-season biomass harvest was possible. The VSU data was analyzed for effects of variety and mid-season harvesting on forage biomass and grain yield. Both varieties had similar mid-season biomass (about 3900 kg DM ha⁻¹). Regrowth swards were nearly 30-cm tall Vs their 72-cm tall in intact counterparts. Results indicate a great potential for dual-purpose teff production in Virginia, involving mid-season forage harvest followed by late-season seed production off the regrowth. Seed quality assessment and studies on alternative weed control strategies will provide additional information about appropriate management practices.

Addressing Climate Challenges with Conservation and Other Innovations

_Willard Tillman (Oklahoma Black Historical Research Project); Chukou Thao (National Hmong American Farmers); Lorette Picciano (Rural Coalition)_

Producers in Oklahoma and the California’s Central Valley have faced particular weather challenges including drought. This presentation will focus on the use of conservation innovations and other programs and strategies to address climate challenges and stabilize farm income in the face of uncertainty. The presentation will focus on case examples of how Oklahoma Black Historical Research Project helped African American and American Indian producers with cow and calf operations access solar water to assure adequate water. It will also cover the initial outcomes of a newer project to address an invasive species – Eastern Redcedar – which is overtaking more than 800 acres of land a day in Oklahoma. The case examples from California will focus on how Hmong and other producers and the organizations that served them responded in the face of water shortages that caused wells to suddenly go dry during a historic drought in the Central Valley. Producers used microloans and other strategies, and National Hmong American Farmers, Inc. used radio and one on one outreach and assistance to help producers develop plans to continue their operations. As more and more communities are faced with weather and climate challenges, the experience of groups and producers on the front lines of the issue have important insights to share with other producers seeking to protect their operations in the face of similar challenges.
## Poster Presentation Summary

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On-farm trainings and a webinar series on financing practices are also being developed.

**ARKANSAS**

Farm Animals and Rural Public Health: Be Informed—Stay Safe

_Eunice Ndewga (Department of Agriculture, University of Arkansas at Pine Bluff)_

People and animals share the same environment, interact and are interconnected in many ways. Awareness and acquiring knowledge of the connections that exist between our health, our animal’s health and the health of our environment is critical to sustaining healthy communities.

As a community member who owns a farm animal or pet, or who interacts with animals in any way, it is important to be informed of potential health risks, environmental issues and the proper care and handling of animals to protect our health and our environment. Scientific based information on potential disease risks communicable between human and farm animals, and the environmental impacts of animals will be highlighted. Recommended ways of reducing disease risk transmission and environmental impacts will also be shared.

**ARMS**

**CALIFORNIA**

High Value/Specialty Crops & Innovative Production Systems

_Ramiro E. Lobo (University of California Cooperative Extension, San Diego County); John P. Hewlett (University of Wyoming and Right Risk LLC); Jose Fernandez de Soto (University of California Cooperative Extension, Ventura County)_

Enterprise diversification is one of the most commonly used risk management strategies by agricultural producers in the US. Growers, large and small, are constantly searching for crop or enterprise alternatives they can add to their production mix to increase their revenues. In addition, they are always looking for technologies or production systems that make their farms more efficient and more economically viable. However, identifying and evaluating new or specialty crops and assessing the impact of new technologies or production systems on farm profitability is a difficult and intimidating task for producers. The challenges and the risks involved are even greater for small-scale agricultural operators who may have only limited access to resources and information and operate under higher uncertainty.

This poster will provide information on how producers can make better decisions about the issues identified above by: (1) Providing an overview and discussing the opportunities and challenges with specialty crop selection, production, and marketing strategies to maximize profit potential for small-scale growers, (2) Discussing issues and opportunities related to innovative production systems including organic, hydroponic, vertical, and container growing systems for high value specialty crops including vegetables, strawberries, blueberries, blackberries, pitahayas or dragon fruit, passion fruit, and many other fruits, and (3) Discussing enterprise selection strategies and discussing electronic tools we have developed in collaboration with Right Risk, LLC to help farmers evaluate crop alternatives and to assess the effect that new production practices or technologies may have on the overall profitability of their farming operations.

**USDA-FSA (DISTRICT OF COLUMBIA)**

Reporting on the Success of the USDA-Farm Service Agency Microloan Program

_Carrie L. Novak (Senior Loan Specialist, USDA-FSA-Farm Loan Program)_

In 2013, Farm Service Agency introduced a new loan program, the Microloan operating program. It was designed to target and assist beginning, small and urban farmers while reducing required paperwork. The program has exceeded expectations in that many farmers who had never used Farm Service Agency programs before received their first loan. The loan program also contributed to an overall increase in utilization of direct loan funds by veterans, underserved and beginning farmers. This poster will highlight the
POSTER PRESENTATIONS

success of the program through the use of statistics, short success stories, and pictures.

USDA-AMS (DISTRICT OF COLUMBIA)

Sound & Sensible Organic Certification*

Betsy Rakola (US Department of Agriculture, Agricultural Marketing Service)

In 2014, the National Organic Program’s (NOP) Sound and Sensible initiative funded 14 year-long projects across the United States aimed at making organic certification more accessible, attainable, and affordable while maintaining high standards, ensuring compliance, and protecting organic integrity. Project leads worked directly with organic farmers and businesses to identify and remove barriers to certification, streamline the certification and record keeping process, and conduct education and outreach. Many of the projects focused on outreach to underserved communities, such as non-native English speakers and Plain/Amish communities, about the benefits of organic certification.

The Sound and Sensible projects have resulted in a trove of valuable tools, guides, and training materials. In total, the projects reached over 2,000 farmers and ranchers directly, as well as delivering 75 tip sheets/fact sheets, 16 training curricula and workshops, and 15 informative videos. The tools address four main topic areas:

- The Organic Value Proposition - Why Go Organic and Where to Start
- Understanding Organic Rules, Certification, and Inspections
- Outreach and Education for Potential Organic Farmers
- Spanish-language resources

These resources will benefit the broader organic community, including the nearly 20,000 certified organic producers and processing facilities across the United States. USDA has published all of these tools on its website at https://www.ams.usda.gov/report-processing, which are available for free and may be reused by any member of the public.

*13 non-governmental partners collaborated with USDA on this project – Washington State Department of Agriculture, the International Organic Inspectors Association, Ohio Ecological Food and Farm Association, Pennsylvania Certified Organic, Northeast Organic Farming Association – Vermont, Baystate Organic Certifiers, Organic Services, Florida Organic Growers, WILL Interactive-Carolina Farm Stewardship Association, National Center for Appropriate Technology, Agriculture & Land-Based Training Association, California Certified Organic Farmers, and Oregon Tilth

FEDERATED STATES OF MICRONESIA

Climate-Smart Urban Agriculture Systems to Combat Malnutrition and Food Insecurity in Small Islands

Murukesan Krishnapillai (College of Micronesia-FSM)

Densely populated urban settlements in small islands like the Federated States of Micronesia resulting from constant inflow of population from rural settings and atoll islets results in extensive youth unemployment and associated social problems. Population density and lack of enough space or quality soil for field-based cultivation often results in health and social challenges of varying severity. The influx and consumption of less nutritious imported food induce health problems such as diabetes, hypertension, obesity, gout and a high incidence of malnutrition among children. While protein-energy nutrition is taken care of with some imported foods, the population often lacks micronutrients to address ‘hidden hunger.’ This calls for the use of low-cost urban vegetable production systems to combat ‘hidden hunger,’ alleviate poverty and improve food security. Urban agriculture has the potential for primary or supplemental income and it offers a pathway out of poverty. It has low start-up costs, short production cycles, and high yields per unit of time and unit of area and water. Value of leafy green vegetables to combat micronutrient deficiency is irreplaceable and irrefutable. This poster will discuss how low-cost climate-smart urban agriculture systems suitable for small islands could help combat the multiple burdens of malnutrition and food insecurity.

FLORIDA

Sustainable and Diversified Small-Scale System of Agricultural Enterprises

Sandra Thompson, Lawrence Carter, Trevor Hylton, Linda Sapp, Charles Brasher and Freddie Harris (Florida A&M University)

This applied research and extension system is designed to equip audiences to start and manage small acreage for agricultural (income, education, food, therapeutic, and enjoyment) purposes using sustainable practices and diversified methods on three different production platforms. The platforms are homestead plots (orchard and raised beds), stationary flatbed, and mobile recreational vehicle (RV). The principal audiences are: (a) new and beginning farmers, (b) 4-H youth and other groups/schools, and festival participants, and (c) various agencies/centers providing supportive and therapeutic treatment services (e.g., substance abuse, homeless, elderly), and social clubs.

The objectives are to: 1) stimulate interest in small-scale farming; 2) demonstrate agricultural production benefits for varied audiences; 3) show varied types of sustainable practices used in agricultural production; and 4) provide flexible enterprise budgets for adoption.

The system rollout is in three phases. Phase I was the 2015 establishment of the stationary flatbed platform with an installed irrigation system, featuring seasonal vegetables, herbs grown in beds and through hydroponics. Phase II (95% complete) consists of an orchard and several uniquely designed raised beds of seasonal
Improving the Quality of Research in Agriculture through Industry Feedback

Kaylene Sattanno, Marilyn E. Swisher, Kelly N. Moore and Christine Kelly-Begazo (University of Florida)

Once used extensively as a pesticide, methyl bromide is now a banned soil fumigation option. There has been considerable research into broad-spectrum chemical alternatives in the U.S., but the results show inconsistent pest control. In conjunction with the Agricultural Research Service (ARS), researchers at the University of Florida are investigating a new option: anaerobic soil disinfection (ASD). This is a biointensive method of integrated pest management that involves the pre-plant soil incorporation of an organic nitrogen source, a labile carbon source, and adequate water to saturate the soil.

In this study, the researchers used 4.5 tons of chicken litter and 1,700 gallons of molasses per acre for the full rate application, resulting in a cost of $1,700 per acre. The conventional grower practice in this study resulted in a cost of $1,900 per acre. This treatment will be useful to both conventional and organic producers. This study sought to involve people who regularly engage with the tomato growing industry to assess the ASD method. This approach yields unique insight and perspective not otherwise captured by research trials that exclusively collect data that can only be analyzed quantitatively. Researchers can then use participant feedback to inform discussions on whether to add, change or remove treatments and/or measurements in future trials.

A Comparative Evaluation of EM on Soil Quality and Fresh Yield of Brassica oleracea var. acephala Grown on Orangeburg Loamy Sand Soil

Cassel S. Gardner and Alfredo B. Lorenzo (Florida A&M University)

Effective Microorganisms (EM) is a microbial inoculant designed to improve soil condition and to increase production while reducing the use of chemicals and other synthetic compounds. A field study was conducted to comparatively examine the effects of EM and traditional nutrient sources on fresh leaf yield of collard greens (Brassica oleracea var. acephala) and postharvest soil chemistry. The study, a 4 x 4 RCBD was conducted on the Research and Extension Center Farm of Florida A&M University, Quincy, Florida, during the Fall of 2011. Treatments were 202 kg/ha of N as ammonium-nitrate fertilizer, mushroom compost, EM at 0.1 percent per hectare, and control. Seedlings were planted on raised beds covered with black plastic, and drip irrigated. The crops were harvested approximately 12 weeks after planting.

Data collected includes plant height, plant weight, leaf length, leaf width, root length, and root weight. The fresh yield in kilograms per hectare was derived using aboveground plant weight. Approximately 2 weeks after harvesting, soil cores were removed at 0–15.24 cm and 15.24–30.5 cm and were processed and subjected to physical and chemical analyses. All data were statistically analyzed using SAS 9.3.

Results showed fresh leaf yield was significantly higher in plots treated with ammonium-nitrate fertilizer and mushroom compost than those treated with EM and control. Preliminary analysis of soil chemistry showed no significant differences among the treatments in concentrations of P, NO3, TKN; pH, OM, and CEC. This study is ongoing to establish more accurate information.
IDAHO

Increasing Idaho Small Producers’ Access to Local and Regional Markets: Challenges, Opportunities, and Strategies

Soren Newman and Darin Saul (College of Agricultural and Life Sciences); Colette DePhelps (University of Idaho Extension); Ray Dezzani and Brendan Gordon (Dept. of Geography); Aaron Johnson, Paul Lewin and Phil Watson (Dept. of Agricultural Economics and Rural Sociology); Felix Liao (Dept. of Geography); Cinda Williams (Community Food Systems & Small Farms); Shenghan Xu (College of Business and Economics), University of Idaho

This multidisciplinary project explored optimal strategies for small-sized producers to access local (within 100 miles) and regional markets (between 100 to 400 miles) in Idaho where limited infrastructure, low population densities, and long transportation distances complicate food system development. Interviews with producers, grocers, chefs, food distributors, and food hubs combined with producer and buyer survey results identified region- and stakeholder group-specific challenges, buyers’ perspectives on strategies to increase producers’ marketing and selling success (e.g., improving reliability, consistency, and convenience), and producers’ educational needs for engaging these markets (e.g., grading, pricing, and establishing relationships). Economic conjoint analyses estimated buyers’ willingness to pay for select local products across a variety of attributes. For example, we found on average grocers are willing to pay $0.77/lbs. more for tomatoes grown within 200 miles compared to conventional tomatoes. Geospatial analyses identified key demand points in Idaho as well as products with the highest unmet demand and compared the dominant products grown by small farms with their distances from the nearest major demand points, tentatively demonstrating a von Thunen effect (i.e., products are generally produced at a distance from the market that maximizes profit based on yield and costs, leading to shorter farm-to-market distances for vegetables than livestock or grains) in north Idaho and the Boise area. Supply chain analyses highlighted optimal strategies for product aggregation, storage, processing, and distribution. Using a supply chain network model, we identified the potential need to establish a transshipment (i.e., intermediate) point in southern Idaho, given certain cost structures.

KENTUCKY

Building Women’s Opportunities and Self-Confidence

Laura Rogers (Kentucky State University Cooperative Extension)

Purpose: Regardless of their race, economic status, nationality, or religion, women are often downtrodden and need to build their opportunities and self-confidence.

Objectives: 1) Improve the status of women in Appalachian Kentucky; 2) In areas where “women are not allowed to speak over men”, improve men’s respect for women; and 3) Improve Appalachian women’s opportunities.

Methods and Results: 1) Fifteen years ago, at Heifer International’s Women Helping Others and Ourselves (WHOO) International Conference, a woman from Africa spoke. Laura learned that women have the same situation worldwide. She started writing articles for the WHOO newsletter and formed a local WHOO chapter. 2) As an 1890 Small Farm Area Agent in Appalachian Kentucky, Laura found a group of teenage girls who knew nothing about professional jobs or college. She developed annual “Professional Dress Days” where 12 limited-resource girls visit Kentucky State University and go for their first time to a mall where each purchases a new dress (funds donated). One girl now plans to attend college. 3) Where many of Kentucky’s Appalachian coal mines are closing, Laura worked with two coal miners’ wives to develop pastured poultry and honeybee enterprises for income and a sense of accomplishment. The participants have now grown to over 70. 4) Photography builds women’s self-confidence. Laura uses the camera to teach women that they are smart, beautiful, should be highly regarded, and are valuable assets to their communities.

Conclusions: Through education and intervention women can build self-confidence in themselves which carries forward to others.

IOWA

Minimizing Food Safety Risk at the Farmers Markets through Online Education for Producer Vendors and Market Managers

Catherine Strohbehn, Angela Shaw, and Linda Naeve (Iowa State University Extension and Outreach)

The popularity of local foods through direct-to-consumer market channels, such as farmers markets and Community Supported Agriculture (CSA) models, along with a desire by Americans to “know their farmer, know their food” is increasing. In 2015, the USDA reported 8,476 farmers markets in the U.S., an increase of 2.5% over 2014, with an estimated sales volume of nearly $2 billion. The broad availability of food items sold at farmers markets presents a higher risk because more methods of processing are used and a greater number of appropriate controls are required. According to the Center for Disease Control and Prevention, between 1998 and 2008, 46% of foodborne illnesses were attributed to produce and nuts. A foodborne outbreak stemming from a local farmers market could cripple the expanding local food systems and their economic advances in rural and urban communities. In person food safety trainings have emphasized ways to prevent food borne illness but farmers are challenged to attend face to face meetings due to time and budget constraints.

Our team of food safety and horticulture educators developed four online modules targeted to farmer’s market vendors and market managers as one approach to mitigate risks of foodborne outbreaks. Changes in knowledge were assessed with pre-post module quizzes using descriptive statistics. Post-survey questions showed perceived changes on procedures used at markets. Preliminary findings show that online delivery without a registration fee is effective for reaching and influencing farmer’s market vendors and managers.
Bridging the Road to Success for the Small Farmer

Cynthia Rice, Buddhi Gyawali and Bijesh Mishra (Kentucky State University)

Farmers continually work to break even. Early and late hours, learning new processes and techniques, watching the bottom line, and occasionally resting a few hours in sleep. Identification of methods to help farmers get new information and identifying training issues as well as financial opportunities is one of the goals of Kentucky State University. Most farmers don't have time to attend weekly classes at a school but a couple of days down to a couple of hours allow farmers to begin to get an understanding of new techniques and technologies. Training, workshops and focus groups allow farmers to get their opinion out to Kentucky State University staff and faculty and allows these same Kentucky State University representatives to offer access to Department of Agriculture, Natural Resources Conservation Service, Fish and Wildlife and many other agencies at the federal and state level.

LOUISIANA

Using Agriculture as a Fast Track Vehicle for Change through Experiential Learning

Stephanie Elwood, Kelli Hollins, Yemane Ghebrejissus, Milagro Berhane, Peteh Haroon and Owusu Bandele (Southern University Agricultural Research and Extension Center)

The Southern University Agricultural Research and Extension Center (SUAREC) provides agricultural training to incarcerated and adjudicated youth. Training topics include communication and life skills, as well as horticultural and work force skills. Instruction involves both classroom and hands-on activities including the establishment of horticultural garden plots. Instructors utilize a community gardening curriculum that was developed by the SUAREC. Certificates awarded upon successful completion of the program can be utilized to support applications at any horticulture related establishment and for presentation at court to display program participation and compliance. This program has been implemented at three facilities. Jetson Center for Youth (JCCY) was the pilot program that began in May, 2011 until the closure of the facility in January, 2014. Gardening classes were conducted twice a week. In response to Jetson’s abrupt closure, the program was established at THRIVE! of Baton Rouge, a public charter boarding school that serves adjudicated students. Weekly classes at THRIVE! began May, 2014 and a garden was established that is currently maintained by students. We have also initiated a gardening program at the Bridge City Center for Youth in New Orleans. Several of the juveniles from JCCY were transferred there and provide leadership in the project. Future plans include formalizing a memorandum of understanding with horticultural-related establishments to allow our graduates to obtain work opportunities upon release. We will also endeavor to establish internship/work release opportunities for selected trustworthy youth to afford work-related opportunities even while they are incarcerated.

MAINE

Innovation in Collaborations and Networking for Small Farm Program Development, Research, and Evaluation

Donna Coffin (University of Maine Cooperative Extension)

Through the years, Extension educators have been charged with assisting people with research based information focused on client needs. They have always used a variety of methods to communicate with their clientele including newsletters. Printing and mailing costs for surface mailed newsletters is no longer financially feasible with the average cost of mailing at $0.50 for each newsletter.

Feedback on the number of clients who actually opened and read the newsletters was unknown. Extension staff have turned to electronic versions of newsletters to educate their clientele more efficiently with costs at 1% of surface mailings. Feedback on newsletter readership is now available.

Cost for the system runs less than $900 a year for up to 10,000 clients who can sign up for one or more of the 10 newsletters produced by seven county and state offices. Time sensitive information can be sent immediately to these interest groups and others. Notification of newsletter emails can be shared with Facebook & Twitter accounts with one click.

Open rates average 34% and click-through rate (when someone clicks on a link of interest in the newsletter) averages 22% while the industry average is 20% and 8%. Extension’s newsletters are opened, viewed and folks are interacting with the material presented at a rate higher than similar industries.

The Constant Contact™ email management system has proven to be an effective and efficient way for County Extension staff to remain in contact with their clientele, and to assess the relative use and impact of these communications.

Crop Insurance Use and Perspectives among Maine Farmers

Tori Jackson and Erin Helene Roche (University of Maine Cooperative Extension)

Maine farmers are identified as “underserved” by the USDA Risk Management Agency (RMA) due to a low level of crop insurance participation and program availability. In partnership with the RMA, the University of Maine Cooperative Extension seeks to sustain small farmers through crop insurance education.

We presented crop insurance policy options, requirements, and costs to four farmer groups and conducted an optional survey. The objectives were to identify the issues preventing farmers from enrolling in crop insurance, to evaluate the knowledge farmers gained from our outreach and identify future outreach strategies based on results. Target farmer groups included wild blueberry, small grain, pasture, and mixed vegetable and fruit (n = 151) producers.

Results showed approximately 80% of blueberry, mixed vegetable and fruit, and pasture farmers respectively were uninsured, and identified “other” as the top reason for not enrolling. However,
approximately 30% of these uninsured farmers were either “highly” or “somewhat” likely to sign-up for crop insurance in the future. Of grain farmers, 40% were uninsured and cited “coverage unavailable for my crops” as the main reason. Fifty-one percent of all farmers reported that their knowledge of available risk management options had increased “somewhat”, whereas 26% reported their knowledge increased “greatly” and 23% reported it “remained unchanged”.

We conclude that outreach can be improved by the following ways: 1) address farmer-identified barriers in future presentations, 2) increase farmer discussion and engagement around crop insurance to reveal “other” reasons for not enrolling, and 3) incorporate farmers into outreach to provide “real world” perspectives.

**MARYLAND**

**Awareness and Best Marketing Practice Training for Socially Disadvantaged Groups on the Lower Eastern Shore of Delmarva: Assisting Women, Veterans & Minorities**

Arthur Allen, Mason King, Eric May, Berran Rogers, Fawzy Hashem and Enrique Escobar (University of Maryland Extension-1890 Program/UMES); Lisa Purnell (USDA-ARS)

Socially disadvantaged groups face grave economic challenges such as limited access to capital and markets, and insufficient business skills. The overall goal of this small USDA grant program at University of Maryland Eastern Shore is to identify the needs of socially disadvantaged groups (SDGs) who wish to start or expand small businesses, and to provide training and technical assistance leading to increased economic competitiveness. The project team is targeting SDGs, including minorities, women, and veterans, that live and work in four contiguous counties on the Lower Eastern Shore of Maryland and Virginia (Somerset, Wicomico, Dorchester, and Accomack) where poverty rates are 6.7 to 13.6% above respective state medians.

Our approach is currently focused on characterizing the business interests and challenges facing SDGs by holding community listening sessions in the above mentioned counties. Based on the findings during the listening sessions, we will provide training workshops to assist these groups in starting new businesses or enhancing existing ones by enhancing their business savvy, technical skills, and helping them find finance to support existing or start-up business ventures. Planned workshops will emphasize, but not be limited to, the development of business and financial plans, feasibility study analyses, and eventually the formation of cooperatives. This project will be determined a success by engaging 130-150 persons during four listening sessions, training 40-50 workshop participants, and ultimately establishing or expanding 10-20 businesses among SDG community members.

Sharing the Risk: Risk Communication in Community-Supported Agriculture

**Mayhah Roma Suri and Paul Goeringer (University of Maryland)**

In recent decades, community-supported agriculture has become increasingly popular in the United States as an alternative farming system. This presentation will highlight the results of several, related Maryland projects that sought to understand, teach, and evaluate CSA risk management methods.

In 2014, Maryland Department of Agriculture conducted a study after receiving complaints from unhappy CSA farm members. The surveys found that 70 percent of all farmers reported having a conversation in some form about the risks of joining a CSA farm. However, just over half of the member respondents reported signing a membership agreement before joining. Upon closer study of the membership agreements and contracts available on CSA farm websites it was found that most agreements discuss risk in vague terms. While farmers in Maryland do mention risk to members, it is not explained clearly in written agreements. Using these findings, University of Maryland developed educational programming to provide clearer risk communication methods, including a model membership agreement. An evaluative survey was sent to CSA farmers who participated in the workshops to determine if the model contract was useful. Farmers reported using the ideas from the contract, if not the contract in full.

In conclusion, development of clear, usable contracts could be important in increasing transparency and strengthening the relationship between CSA farm operators and members. Conference attendees could use similar survey methods to gain a better understanding of CSA farms in their communities in order to develop targeted, relevant educational efforts to support CSA farm operators.

Using Controlled Internal Drug Release (CIDR) Devices to Target Lamb and Chèvon Peak Demand by Inducing and Synchronizing Estrus in Sheep and Goats During the Fall and Late Spring (Normal Season and Out-Of-Season)

**E.N. Escobar, E. Kassa and H. Taylor (University of Maryland-Eastern Shore)**

For the last 25 years, rapid changes in USA’s demographics have increased demand for lamb and/or chèvon (goat meat). USDA/NASS reported yearly chèvon imports exceed $129+ million. Yearly peak demands usually pattern ethnic holidays which change year to year because coincide with traditions and festivals following different types of calendars. Sheep/goat producers are challenged to cater to consumers because sheep and goats are seasonal breeders. Since 2009, FDA approved CIDRs for induction of estrus during seasonal anestrus in sheep. FDA approval for goat use is pending in the USA. The purpose of this demonstration was not to determine efficacy in sheep (or goats), but to determine applicability and practicality of the CIDR use in commercial flocks/herds in order to reduce lambing/kidding periods to target peak demands for lamb or chèvon.
For 3 consecutive years ewes/does were separated in CIDRs or No-CIDRs groups for breeding at Spring-Summer (anestrus) or fall (traditional breeding). At every breeding event 10 does/ewes were administer CIDRs and 10 does or ewes were No-CIDRs. Post breeding (35 days) blood was collected by jugular venipuncture to determine the level of placential pregnancy-specific protein B (PSPB) in serum. At lambing/kidding time the newborns were tagged, weighed, sexed and litter size was recorded. Sheep showed higher pregnancy rates during the anestrus breeding cycles (with CIDRs 66%; No-CIDRs 32%) than goats (with CIDRs 25%; No-CIDRs 31%). During the fall breeding cycle sheep/goats showed similar pregnancy rates (95% and 96% respectively). This project was funded by an Evans-Allen grant USDA/NIFA MDX-AS1012001.

MISSISSIPPI

Adaptability, Efficiency, and Impact of Irrigation Systems and Scheduling Methods on Small and Limited Resource Vegetable and Fruit Farms in Mississippi

W.B. Evans, (Truck Crops Branch, Mississippi State University); A. Johnson (School of AREAS, Alcorn State University) and J. Diaz (Desert Research Center, UC Davis)

A three year study is underway in Mississippi to improve irrigation efficiency and profitability of small fruit and vegetable farmers in the state. Currently, most small farmers use calendar or other minimally-data based methods to irrigate their fruit and vegetable plantings, with many farmers still growing these high value crops with no supplemental irrigation at all. The team is working with three on-farm and two campus research sites to test and demonstrate the impact of low-cost sensor based irrigation on yield and quality of vegetable and fruit crops. Two types of sensors have been tested to date: tensiometers and granular matrix sensors. The latter have had fewer maintenance issues and provided more consistent soil moisture data and will be used for the remainder of the field work.

In 2017, results from the 2015 and 2016 studies will be used to design the initial on-farm demonstrations. These will be featured in on-site field days. Complementing the field research and demonstration studies is a survey that has been given to more than fifty growers to date to assess their use and attitudes toward irrigation and irrigation technology. The survey includes questions related to farmer demographics, farm size, current infrastructure, crops, and interest in irrigation technology.

MISSOURI

Assessing Sampling, Price Reporting as Farmers Market Vendor Marketing Tools

Parcell, J., Moreland, J., Kelly, D., Ayers, V., Quinn, J., Byers, P., Creed, C. (University of Missouri Extension)

The USDA Agricultural Marketing Service (AMS) and state level agriculture department price reporting programs are responsible for administering and reporting publicly reported prices for agricultural commodity trade. The cost of collecting farmer’s market price data limits the degree to which prices can be collected. We sought to assess whether hedonic modeling can be applied to farmer’s market vegetable prices to create price information that is both less costly to produce and more valuable because the reported prices represent quality attribute adjusted prices.

A hedonic model decomposes the price of a product into component prices for each of the products’ characteristics, thereby providing an estimate of the value of each characteristic independent of the products’ other characteristics. The hedonic model framework allows for generalities in the price-characteristic relationship to be determined regardless of an individual observation.

The research project was designed to test the development of price series’ that may provide valuable pricing information, examine whether prices can be projected across location so as to reduce data collection costs, and to provide seasonal pricing patterns that account for the quality change across season.

Data availability and data structure. This task involved local extension collaborators working with local farmers’ markets to collect data. Four extension agents also assisted with this activity, and the farmers’ markets included are Kansas City, Webb City, Columbia, and two smaller farmers’ markets. The extension collaborators worked with trained market reporters to understand best practices for collecting data.

A Systems Approach to Improving Small Farmers’ Quality of Life in Missouri

Miranda Duschack and Kamalendu B. Paul (Lincoln University Cooperative Extension)

The Innovative Small Farmers’ Outreach Program (ISFOP) of Lincoln University Cooperative Extension provides research based information and education to underserved and minority farmers and ranchers with the goal of improving their: 1) farm income, 2) production techniques, 3) adoption of environmentally sustainable growing practices, and 4) the quality of life within their rural and urban communities. Eleven field staff disseminate pertinent information including those from the USDA through one-on-one consultation or by organizing workshops targeting eligible farmers and community based organizations. Launched in 2008, ISFOP covers 20 counties in three different regions of Missouri. Of the present client base of 326, 57 are racial minorities and 61 are women sole proprietors.

Our Poster will present selected program impacts attained during FY 2014 and 2015. Farm income was increased through innovative marketing techniques and through reduction in input costs. Collaborating farmers adopted new enterprises such as pastured poultry, furrowing sheds, and various season extension techniques. Sustainable growing practices such as drip irrigation, cover crops, managed grazing systems, and integrated pest management were extensively used. An improved quality of life within rural and urban communities was measured by a strong farmers’ market, community garden participation, and donations to local food pantries. These efforts have made a positive and broader impact in the lives of our client families in Missouri.
MISSOURI

Establishing a Winter Production and Season Extension Education Center for the Hmong Community

David Middleton, Nahshon Bishop and K.B. Paul (Lincoln University Cooperative Extension); Eileen Nichols (Webb City Farmers Market)

Since 2005, Missouri’s Southwest Region has been enriched by an influx of Hmong refugees looking to establish working farms and reconnect with the livelihoods they once had in their home country of Laos. Rooting themselves in Missouri’s agricultural framework hasn’t been without its fair share of obstacles. Lincoln University Cooperative Extension’s (LUCE) Innovative Small Farmers’ Outreach Program (ISFOP) staff eased their transition by assisting them through a variety of avenues by offering both research-based information and hands-on training through an education site that focuses on low energy input and season extension technologies to increase the annual revenue of these families.

In fall 2015, the Webb City Farmers Market with support from LUCE/ISFOP and the University of Missouri Extension applied to the Missouri Department of Agriculture for a Specialty Crop Block Grant. The grant request of $67,000 was approved to build a working Hmong Education Center. This center is composed of two 30x96’ high tunnels, a seed starting greenhouse and the necessary equipment to produce fresh vegetables on a year-round basis. This 3-year project is already under way providing workshops, demonstrations, and hands-on training on how to grow sustainably and profitably for approximately 30 Hmong families. Impacts are being measured through pre/post surveys conducted at each workshop and through follow up surveys of individual workshop attendees. This Education Center is providing the much needed support and assistance to these underserved Hmong farmers and their community.

NEBRASKA

Nebraska Extension Partners with other Organizations to Provide Educational Opportunities for Beginning Farmers, Educators and Consumers

Kathie Starkweather and Wyatt Fraas (Center for Rural Affairs); Gary Lesoing (University of Nebraska-Lincoln); Jessica Jones (Nebraska Extension); Vaughn Hammond (Orchard Manager)

Nebraska Extension, the Center for Rural Affairs, the Nebraska SARE Program and the Nebraska Sustainable Agriculture Society have partnered together on different educational opportunities to assist people interested in learning more about sustainable farming practices. In 2013 Nebraska Extension and the Center for Rural Affairs conducted six Beginning Farmer Workshops at several locations across the state. Three workshops on value-added beef and three workshops on vegetable production were held. Seventy-three participants learned about production practices and financial management from experienced and successful farmers. During the summer we had two Beginning Farmer Tours in outstate Nebraska. Forty-two participated in these tours that visited value-added and diversified agricultural enterprises.

In 2013 and 2014, Nebraska Extension held three small farm workshops in eastern Nebraska. These workshops had a major emphasis on small scale food production for the farmer and had 108 participants. In a survey for these small farm workshops, n=91, 72% were likely or very likely to grow something new. On two local food systems tours in 2014-15, n=47, participants increased their knowledge of local food systems 63 percent. Other SARE sponsored tours helped Educators learn more about the local food systems in Nebraska and also some consumers participate so they can have more of an awareness of what goes into local food production in Nebraska at different scales. As consumers and educators learn more about the local food systems, they will promote local food and this will help sustain the small local farmers that produce it.

NEW JERSEY

NJ Land Link – A New Tool for Farmland Access

Lucas Marxen (Rutgers University NJAES Office of Research Analytics); Brian J. Schilling (Rutgers Cooperative Extension); Jeffrey C. Everett and David A. Kimmel (State Agriculture Development Committee)

Purpose/Objectives: Access to land is an obstacle for many young/beginning farmers, and for established farmers seeking to expand particularly in New Jersey where available farmland is scarce and expensive. The purpose of this poster presentation is to highlight a government-nonprofit-university collaboration to develop a web platform to facilitate farmland access in New Jersey.

Methods: With funding from a USDA-NIFA competitive grant, Rutgers Cooperative Extension, New Jersey’s State Agriculture Development Committee, and the Northeast Organic Farming Association of New Jersey collaborated to create NJ Land Link (http://njlandlink.org), a searchable web portal designed to improve access to farmland and farming opportunities in New Jersey. Registered farmland owners can post detailed farm listing that include:

- land parcels and spatial context;
- farm acreage;
- soil characteristics;
- water access;
- types of crops and/or livestock currently raised;
- whether land is certified organic or farmed conventionally;
- housing availability;
- farm infrastructure (e.g., barns, irrigation);
- farmland preservation status;
- lease/sale terms and/or farm work opportunities (manager, apprentice, etc.),
- farm photos, and;
- pertinent documentation (e.g., farmland preservation deed of easement, farm conservation plan, etc.).

Results: Having launched in April 2015, the site has had 324
registered users, 73 farmland listings, and over 240,000 hits in its first year of operation. Outreach meetings to promote the website and associated land leasing resources were hosted with landowners, new and existing farmers, and Extension personnel.

Conclusions: The poster presentation will showcase the NJ Land Link web platform, detail usage to date, and highlight success stories.

NORTH CAROLINA

Forest Farming with Medicinal Plants in a Marginal Woodland
Guochen Yang, Sanjun Gu, Zhongge (Cindy) Lu, and John Beck (North Carolina A&T State University)

Medicinal plants such as black cohosh and goldenseal are increasingly popular as cash crops. Substantial collection from the wild has caused considerable habitat destruction resulting in these some medicinal species becoming endangered. Because these plants are normally slow-growing perennials, new growth protocols are needed to ensure their survival and continuation as a valuable source of income. Cultivation of medicinal plants in controlled woodlands instead of collecting them from the wild would be an alternative way to produce these plants and reduce habitat destruction and loss of plant genetic diversity. Woodland cultivation or forest farming practice could significantly enhance income opportunities for small scale farmers.

To explore the potential of a woodland cultivation, black cohosh and goldenseal populations were established and maintained in a wooded lot on the NC A&T University farm. A plot was tilled slightly for preparation of raised beds with added compost. Mulch was added on top and between the raised beds after planting. Irrigation was initially used for all beds until plant establishment, followed by irrigation vs non-irrigation treatments. Separate beds were used for planting black cohosh and goldenseal seedlings. The planting beds were prepared using a split plot, randomized complete block design (RCBD) with six treatments of irrigation and spacing. The irrigation treatment was applied in main plots, while spacing (three levels) was applied in split plots. The bed size was 4ft x 76ft and the split plot size was 4ft x 24ft. Plants were observed growing with normal morphological characteristics.

Growing Opportunities for Small, Socially Disadvantaged Farmers and Landowners in North Carolina
Joshua Idassi (North Carolina A&T State University); Jimo Ibrahim, Kurt Taylor, Grace Summers and Michelle Eley (North Carolina A&T State University Cooperative Extension)

Small scale farms and woodlands are important economic assets in the southern region of the United States. However, many landowners do not realize the full benefit of their land holdings because they are not well served by agricultural and forestry-related educational programs. Given recent economic conditions, small scale landowners (audience) that do not operate efficiently can exacerbate farm and forestland loss. In rural North Carolina, farmers commonly manage woodlots that were either acquired through inheritance or “came with the farm”.

We initiated a project with two specific objectives: i) To assist landowners in conservation and best management practices on forestland use, and ii) to conduct training for the audience on how to complete USDA loan and grant applications related to land ownership and improvements.

By training our targeted audience in North Carolina in conservation and best management practices in forestland use we expect that they will have an opportunity to develop conservation and best stewardship plans, and to follow these management practices on their forestland. Also, they will be able to apply to existing cost-share programs, loans and grants. The project is appealing to military veterans as well as new and beginning landowners who are interested in starting or managing their farms and/or forestslands. Finally, this project is providing opportunities for small scale farm and woodland clusters to be profitable and in the long-run, will energize military veterans and new and beginning farmers/forest landowners to view agriculture and natural resources as future and viable career opportunities.

Farming in the Future
Kurt Taylor, Joshua Idassi, and Jimo Ibrahim (North Carolina A&T State University)

World population is estimated to reach 9.7 billion by 2050 UN (2015). Based on current food production projections, the world needs to produce 70% more food by 2020 (FAO, 2014). This is a serious proposition for farmers who are getting older. In North Carolina, the average age for farmers is 58.9 years and nationally, 58.3 years (US Census Bureau, 2014). To meet the growing need, food will have to be imported from another country, continent, increasing the cost while decreasing availability and variety to the consumer.

In order to grow the population of next generation farmer, North Carolina A&T State University is working in partnership with “Growing Change” a beginning farmer group to train beginning farmers on how to access the different benefits and services of the USDA-FSA & NRCS, NCDA-CS-Specialty Crops grant, USDA-SARE. We are also working to train beginner farmers on hydroponic production, as well as providing technical knowledge and support. Hydroponic production (growing plants without the use of soil), uses water more efficiently than traditional farming while at the same time requiring about one-fifth acreage to produce similar, or more crop than can be grown on a traditional farm.

During the 2014-2016 school years, North Carolina A&T State University and the Discover Agriculture Program provided first-hand experience with one type of hydroponic system to over 300 youths ranging in age from 10 to 15 years. The youths participated in hands-on activities related to hydroponic production of plants. These trainings are designed to stimulate interest in agriculture and contribute to the future generation of farmers.
Local Farm and Food Profile Infographic
Sanjun Gu and John E. Beck (North Carolina A&T State University)

The Local Farms and Foods Profile presents readily available data from the USDA Ag Census in a user-friendly infographic that highlights county farming and local food system trends. The profiles are designed for all 100 North Carolina counties and sixteen regional councils of government and serve to catalyze discussions among stakeholders on the topic of agriculture as economic development. Agriculture educators and advocates, and farmers play a vital role in starting these conversations; these profiles can serve as a tool to support local food systems and boost economic development.

Extension Horticulture at North Carolina A&T State University Focuses on Small Farm Sustainability
Sanjun Gu and John E. Beck (North Carolina A&T State University)

The Extension Horticulture Unit at North Carolina A&T State University was reorganized in 2013, after a long period of absence of a Horticulture Specialist. The new unit has set up goals of increasing on-farm efficiency and profitability with sustainable vegetable and small fruit production practices, and helping underserved communities with local food production to fight food insecurity. Target audiences include the extension agricultural agents and technicians, local food agents, and small farmers in both rural and urban areas.

Through field demonstration and applied research, in-service training, farm visits, field days, and extension publications, the unit develops projects in organic and sustainable production with low input seasonal extension tools, organic and sustainable specialty crops, alternative crops (medicinal plants and niche crops), and emerging practices such as vegetable grafting and technology transfer (rain catchment and solar energy). The horticulture unit works seamlessly within the School of Agricultural and Environmental Sciences and collaborates with government agencies such as USDA, NRCS and North Carolina Department of Agriculture, Southern SARE, North Carolina State University and the Center for Environmental Farming Systems, NGOs such as the Carolina Farm Stewardship Association, and private companies such as Johnny's Select Seeds. From 2013-2016, the horticulture team has secured close to $1M extramural funding from OREI, SCBGP and Wal-Mart Foundation.

Organic Strawberries in High Tunnels: Cultivar Selection and Economics
Sanjun Gu, John E. Beck and Joseph A. Moore (North Carolina A&T State University); Wenjing Guan (Purdue University)

Organic strawberry is one of the most widely distributed organic produce. There was a considerable gap between regional demand for organic strawberries and what North Carolina growers could supply. While organic strawberry could be produced locally in high tunnels for off-season markets, information on cultivar selection and economics was scarce. The objectives of this project were to identify appropriate cultivars for high tunnel production and to research the profitability of high tunnel strawberries.

Trials were conducted in Greensboro and Lincolnton with eight cultivars in 2013/14, and in Greensboro and Goldsboro with 10 cultivars in 2014/15. Significant cultivar differences in whole-season yield were observed at Greensboro, but not Goldsboro. ‘Florida Radiance’ had the highest marketable and total yields, followed by ‘Winterstar’ and ‘Chandler’ at Greensboro, while ‘Benicia’, ‘Winterstar’ and ‘Chandler’ were the top producing cultivars at Goldsboro. Harvest of day-neutral cultivars San Andreas and Albion started in November. Among June-bearing cultivars, ‘Florida Radiance’ began to produce berries in late December, followed by ‘Winterstar’. The peak harvest season occurred in April for all the evaluated cultivars.

Results from this two-year research indicated that the cultivars for profitable high tunnel production should be day-neutral, or June-bearing with less chilling requirement, such as cultivars from Florida or California. June-bearing cultivars Florida Radiance, Winterstar, Benecia, and day-neutral cultivars Albion are recommended for high tunnel production. Changes in fruit quality through the harvest season, spider mites and disease management, winter damage to open blossoms and fruit, and soil fertility management will be discussed.

Small Farm to Chef Marketing
Godfrey Ejimakor (North Carolina A&T State University)

One of the strategies that small farms can use to increase income is to cater to consumers who prefer to buy local food. In addition to supplying local food to grocery stores, farmers’ markets and road stands, farmers can sell food directly to restaurants (farm to chef marketing). Farm to chef marketing requires the identification of chefs or restaurants that will agree to use locally-sourced food in their establishments. Searching and finding such chefs involves cost, in time and money, that may discourage farmers, especially limited resource ones from considering the option. Some chefs may also be unwilling to use locally sourced food if they determine that doing so will not be in the best interest of their restaurants.
Identifying the characteristics of restaurants that are unlikely to use locally sourced food could help limit the search effort expended by farmers and increase the chances that small farmers could successfully market to local restaurants. This study used an economic model to identify those restaurants that are more likely to use locally-sourced food. The analyses were based on demand elasticities and changes in demand and supply that result from the use of locally-sourced food by restaurants. Compared to limited service restaurants, full service restaurants are more likely to use locally-sourced food. Farmers who desire to engage in farm to chef marketing are likely to be more successful if they focus their search for restaurant patrons on full service establishments.

Preparing for Timber Taxation
Gregory E. Frey, John L. Greene, and Thomas Straka (USDA Forest Service, Southern Research Station; Clemson University)

Nationwide, about 40% of family-owned farms also have woodlands (Ag Census 2012). These timber assets can provide a lifeline in times of personal economic need, such as crop failure, sending a child to college, or retirement. However, taxes can take a portion of timber sales revenue, thereby reducing net income.

Greene, Straka, & Dee (2004) identified seven general provisions in the federal tax code that provide beneficial treatment for forest landowners, thereby reducing their income tax burden. The research found that between one quarter and three quarters of forest landowners were not aware of the various beneficial provisions. These seven tax provisions mostly are still in effect in 2016, with some changes, but many forest landowners are likely unaware of them.

This poster will provide information about the seven identified beneficial tax provisions, to raise general awareness of their application. The poster will also give general guidance on a few steps forest landowners can take now to help achieve better tax treatment in their individual cases.

VERMONT
Marketing Opportunities and Barriers for Small Farmers in Underserved Communities
Kathleen Liang (North Carolina A&T State University)

This presentation will share key findings of a multi-regional project funded by the USDA-NIFA program to examine opportunities and barriers of relationship marketing, and how it could be applied to support small farmers and ranchers in disadvantaged, underserved communities.

The presentation will offer a brief overview of a traditional marketing theory developed by Ansoff in 1980. Ansoff’s matrix describes the relationships between products and market decisions, which introduced firms’ strategic issues in management and marketing. Ansoff established a foundation for the newly-established theory of inter-organizational and inter-market relationships in marketing moving toward a network paradigm – internal market network, vertical market network, inter-market network, and opportunity network. Combining the Ansoff Matrix with the newly developed market network theories, we could demonstrate how small farm enterprises develop strategies to move from a one-dimensional marketing channel to multiple venues and interactions with other producers, buyers, resources, and services by incorporating the circulation of information and knowledge across actors.

Over 10,000 interviews and surveys have been conducted in the US since 2011 to gather information from small farm operators, marketing service managers, organization leaders, government representatives, policy makers, and various types of buyers (individuals, household, wholesale, retail, restaurant, and other institutions). Results from two distinct communities, one rural and one urban, will be summarized and reported to include best practices, opportunities, and barriers associated with size of operations, types of production, operator’s profile, types of marketing strategies, financial data, decision-making process, and outcomes and assessment.

OREGON
Successfully Navigating the First Ten Years: Education Targeting Farm Developmental Stages to Achieve Long-Term Viability for Small Farms
Garry Stephenson and Lauren Gwin (Oregon State University Center for Small Farms)

Training and launching new farmers is a stated U.S. priority, yet Census of Agriculture data indicate the number of beginning farmers is decreasing. Beginning farmer education must go beyond simply offering training to get them started and instead create educational programs and tools that meet their needs as they develop from startups to mature farm businesses.

The Oregon State University Center for Small Farms & Community Food Systems, in partnership with Oregon Tilth, Inc., is developing a seamless learning progression from basic to advanced education based on key developmental stages of farmers and farm businesses. Educational programs are most effective when they meet farmers where they are developmentally, as farmers and as business people.

Through interviews, focus groups, and surveys, we have identified key developmental stages that are consistent across farmers and farming systems. We will present this stages model and preview plans for our new instructional and experiential curriculum that focuses on business management, small farm profitability, and sustainable farming methods. We will explain how the stages model influences the curriculum’s content, organization, and timing. Our project builds on OSU’s established basic beginning farmer education programs in farm business management – Growing Farms: Successful Whole Farm Management – and hands-on crop production – Growing Agripreneurs.
Agricultural Alternatives: Helping Small Farmers Evaluate Production Options

Lynn F. Kime and Jayson K. Harper (Penn State University)

Working with small-scale and part-time farming audiences is very rewarding, but may be challenging. Extension educators regularly receive inquiries about how to produce specific crops or livestock. Since its inception in 1992, the Small-scale and Part-time Farming Project has provided educational materials to assist producers through the complexities of enterprise selection. The Agricultural Alternatives publication series was developed in response to a need for enterprise selection information by an underserved audience often unable to access Extension information through traditional means because of time limitations.

This comprehensive series, which now contains 65 publications (including 49 covering specific agricultural enterprises), has helped farmers analyze production alternatives by providing a balanced assessment of crop and livestock enterprises that might be suitable for small-scale and part-time farming operations. All publications in the series are available through electronic media and in hard copy format.

During 2015 the web site generated over 360,000 page views and over 5,400 printed copies were distributed. Most publications introduce a specific enterprise and cover important issues including marketing, production, regulations, risk management, and budgeting. To support the enterprise oriented materials, a set of publications were written covering agricultural business management topics including planning, financing, fruit and vegetable marketing, cooperatives, diversification, insurance, farm liability, enterprise budgeting, and managing a roadside stand. Two publications on irrigation and one on organic vegetable production were developed as supporting materials. All publications containing budgets now have interactive PDF files linked to the web page. In addition, 17 of the publications have been translated into Spanish.
Online Marketing for Small Farmers: Opportunities and Challenges for the Goat Meat Industry

Enefok Ekanem, Mary Mafuyai, Fisseha Tegegne, Prabodh Illukpitiya, An Peischel and Fitzroy Bullock (Tennessee State University); Duncan Chembezi and Elicia L. Chaverest (Alabama A&M University)

This poster reports on the project, “Implementing an Accessible Online Marketing Tool for Small and Mid-sized Farmers”, funded under USDA-NIFA’s Small and Mid-sized Farms Program. Small and mid-sized farmers face numerous challenges including access to markets. This project helps small farmers expand their market opportunities in Tennessee and Alabama. Goat enterprises provide additional source of income for small limited resource farmers.

Current research indicates that goat enterprises are ideal for small farmers since goats require small land area, minimum care, modest capital and financial investment to get started.

So goats can be a good alternative enterprise an excellent source of employment and additional income for small farmers. In spite of this opportunity, potential goat enterprises must overcome significant marketing challenges that small farmers face in selling goat meat within a market structure that offers little infrastructure to a non-mainstream meat. Opening additional marketing channels for small limited resource farmers to sell allows them to make additional income to improve their well-being. Using primary and secondary data from Alabama and Tennessee, this poster discusses the goal of the funded project and presents preliminary findings on the structure of the meat goat market in Tennessee and Alabama.

Results from focus group meetings, face-to-face interviews show small farmer attitudes towards online marketing and the extent to which they express interest in doing business using the Internet. Data collected will be analyzed using descriptive techniques including Excel and results presented using graphs and charts. This poster presents means through which results can be used in assisting small farmers expand their market access.

TENNESSEE

Controlling Deer Damage in High Value Vegetable Crops using Low Profile Electrical Fencing

Billy C. Lawton, Alpana Lakshmi, Jotianna Phillips and DeVonte’ Jones (Prairie View A&M University Cooperative Extension)

Damage caused by deer has resulted in a negative economic impact on small vegetables and specialty crop farmers in Texas. Crop damage has been estimated to exceed $20 million dollars a year. Producers have used a number of different methods of abatement to reduce damage to crops such as scare devices, repellents, and fencing. In areas where deer are abundant or where high value crops are produced, fencing may be the only way to effectively manage deer damage. However, in most cases, small farmers cannot justify the cost of installing permanent fencing. This study examines the effectiveness of a low profile polytape fence combined with baiting to discourage deer from entering production areas. One strand of white polytape 18” from the ground is used to establish the outside fence. The second fence is built with two strands of round red polywire at 10” and 14” from the ground. A third polytape fence is built 18” from the ground. Each fence is three feet apart from the other and are connected to a solar powered fence charger. The plot is monitored by four game cameras to record deer activity.

Feral Swine Outreach Activities for Limited Resource Farmers and Ranchers in Texas

Derrick Banks, Corey Hicks, Billy C. Lawton, Alfred L. Parks and Nelson T. Daniels (Prairie View A&M University Cooperative Extension Program)

The aim of this project is to respond to a great need and opportunity that addresses an urgent problem in the U.S. Agricultural system, which is the proliferation of the feral swine population and the destruction that they are causing. Feral swine damage is an ongoing and increasing issue among agricultural producers and landowners. They are causing tremendous economic damage to the economy, with estimates as high as $4 billion annually. This project is a joint effort with the APHIS National Feral Swine Damage Management Program being conducted with the 1890 Universities. Additionally, it is collaborative effort with other Agencies such as Texas AgriLife Extension, The Texas Department of Agriculture, The Texas Parks and Wildlife Department, and two CBO/NGO Organizations.

The objective of this project is to develop an integrated Outreach and Educational Intervention approach to address this problem. Specifically:

1. To establish an integrated outreach program designed to increase awareness and understanding of the magnitude of the problem.
2. To provide technical and outreach through demonstration of techniques and methods used to catch swine.
3. To facilitate various workshops in strategic communities.
4. To develop effective partnerships with USDA/NIFA, other 1890 Universities, and other organizations.

The expected outcome of this project is substantially increasing the awareness of farmers, ranchers, landowners, and concerned citizens.

StrikeForce Initiative for Outreach and Assistance of Socially-Disadvantaged and Veteran Farmers and Ranchers

Carlos F. Lago (The University of Texas-Rio Grande Valley); Wade & Anita Ross (Texas Small Farmers and Ranchers); Aisha Cruz (Texas-Mexico Border Coalition)

The StrikeForce Initiative for Outreach and Assistance of Socially-Disadvantaged and Veteran Farmers and Ranchers is a FY2015-16 2501 Grant Project from the USDA-Office of Advocacy and Outreach. This project assists Socially-Disadvantaged (SD), small and limited resource, women, and Veteran agricultural producers to become better owners and operators of successful farms and ranches by providing training and technical assistance on niche markets and
Reaching Out to Minority Farmers and Ranchers to Assist with USDA Services

Nelson Daniels, Ashley Pellerin, Vidal Saenz, Corey Hicks, Rolando Zamora, Brandon Hawkins and Derrick Banks (Prairie View A&M University)

Addressing the needs of underserved individuals in many rural areas can be a challenge. However, this is a challenge that Prairie View A&M University (PVAMU) has taken on through its Cooperative Extension Program. Agricultural producers, particularly individuals of color, have a strained historical relationship with the United States Department of Agriculture (USDA) Agencies. Minority producers often feel that their ability to repay debt is judged on the color of their skin rather than the soundness of their business plan and their actual ability to pay their loan. It is because of this perception that many producers overlook the services provided by USDA and seek help from outside sources, pay for farm business expense from personal accounts or use personal credit cards to finance the farming operations.

Prairie View A&M University has been assisting minority agricultural producers to overcome these perceptions. This is being done by conducting joint educational programs with USDA staff members. Additionally, PVAMU is providing one-on-one interactions with the farmers. During these one-on-one sessions, Extension staff members assist the farmers with business plan development, completion of USDA forms, and translating information from English to Spanish.

VIRGINIA

Demonstrating Silvopasture Establishment: Time Zero System Ecology

K. M. Mercier and J. H. Fike (CSES, Virginia Tech, Blacksburg, VA); C. D. Teutsch (Forage Research and Extension, SPAREC, Virginia Tech, Blacksburg, VA); J. F. Munsell (FRES, Virginia Tech, Blacksburg, VA); Greg Frey (USDA Forest Service, Southern Research Station, Research Triangle Park, NC)

Interest in silvopasture in the transition zone between the temperate northern and subtropical southern United States has been rising. As part of a long-term effort, portions of 16-ha mixed hardwood and pine stand were thinned (to silvopasture) or clear cut (for pasture or pine plantation) to demonstrate the establishment and management of silvopastures in the Southern Piedmont region of Virginia. Baseline ecology for the existing forestland was documented prior to timber harvest. Data included timber species, basal area and form; soil fertility (pH and nutrients); and soil microbial, nematode, and invertebrate communities. Dominant timber species included several species of oaks (Quercus spp.); basal area 27.3 m²/ha) and loblolly pine (Pinus taeda; basal area 87.6 m²/ha). Challenges for converting these lands to productive pasture are seen in the high levels of soil acidity (pH=4.88; 4.38-5.60) and low levels of soil nutrients (P=2 ppm, 1-24 ppm; K=28 ppm’ 15-54 ppm; Ca=70 ppm, 32-299 ppm; Mg=17, ppm 10-46 ppm; CEC=3.3 meq/100 g, 1.8-5.6 meq/100 g; N=0.09%, 0.01-0.41%; C=2.46%, 1.05-5.69%). Total soil microbial biomass at a 10 cm depth was 31760 kg/ha with a range of 16720 to 86600 kg/ha. Bacterial to fungal ratio was determined with qPCR and ranged from 1.5 to 64.8 with a mean of 15.3. Fifteen parasitic nematode species were identified, along with other free living nematode species. The most abundant arthropods were camel crickets (Rhaphidophoridae), pillbugs (Isopoda), at least two species of harvestmen (Phalangidae), flat backed millipedes (Diplopoda) and field crickets (Gryllidae).

A Survey of Virginia Small Ruminant Production Practices

Dahlia J. O’Brien and Theresa J. Nartea (Virginia State University Cooperative Extension)

The purpose of this study was to collect data on demographics, production systems, management and marketing practices, and perceptions of challenges facing small ruminant producers in Virginia to determine how best Virginia Cooperative Extension can meet the research and programmatic needs of this clientele. To address these objectives, farmers were invited to participate in a 27-question survey.

Respondents were from 46 different counties across the state (150 total responses). Most respondents were female (53%), over the age of 45 (67%), raising ≤ 40 (80%) meat (82%) and/or goats (58%) for 1-5 years (35%), and farming 20+ acres (67%), Boer (goat; 30%), Suffolk (sheep; 20%) and Katahdin (sheep; 20%) were the most predominant breeds reported. Fifty percent indicated that their operation was profitable or was at least breaking even. The top 3 most costly health care issues faced by responding small ruminant...
producers were internal parasites (79%), foot rot/scald (19%) and external parasites (24%). Direct marketing to consumers (78%) and selling at sale barns/auctions (59%) were the most common marketing practices. Respondents indicated that they utilized the internet (83%) followed by university/extension workshops (65%) and books (49%) as small ruminant information resources. Top programmatic needs included small ruminant parasite control (64%), alternative/sustainable feeds and forages (64%), health and diseases (57%), marketing (50%), reproduction (50%), and nutrition (45%).

In conclusion, small ruminant researchers and educators should focus their programs on the needs identified above to increase productivity and profitability for small ruminant producers in Virginia.

On-Farm Validation of a Liquid Semen Vaginal Artificial Insemination Protocol in Hair Sheep
Dahlia J. O’Brien (Virginia State University Cooperative Extension); Stephan Wildeus (Virginia State University Agricultural Research Station)

A low-input and simple milk and egg yolk-based liquid semen vaginal artificial insemination (AI) protocol developed at Virginia State University was evaluated under commercial on-farm settings. Five trials were conducted in October of 2014 and 2015 during the peak of seasonal breeding. Estrus was synchronized in 10 (Farm A), 5 (Farm B), 5 (Farm C), 7 (Farm D) and 20 (Farm E) hair sheep ewes by inserting CIDRs (controlled internal drug release devices) for 10 days. CIDRs were removed 48-hrs prior to initial AI. The morning of insemination, semen from Barbados Blackbelly and St. Croix rams raised at Virginia State University was collected using an artificial vagina, extended to 250 million sperm/ml and packaged into 0.5 ml color-coded straws. Semen was placed in coolers with blue ice for transport to cooperating farms. Multiple rams were used on each farm. A standard insemination gun and no spectacle were used for Al (shot-in-the-dark). At the initial insemination, cooperating farmers were trained in the technique and conducted either one or two additional inseminations at 6 (all farms) and 12 hours (Farms A and B) later on their own. Pregnancy was determined via transrectal ultrasound 22 d after AI. Pregnancy rates of 40%, 67%, 20%, 57%, and 45% were achieved on Farms A, B, C, D, and E, respectively.

Results suggest that the use of liquid semen vaginal AI can be a practical and effective tool for hair sheep flock management.

Consumer Ratings of Meat Quality Attributes of Pasture-Raised Ground Lamb Meat as Affected by Breed and Supplementation
Theresa J. Nartea and Dahlia J. O’Brien (Virginia State University Cooperative Extension); Stephan Wildeus (Virginia State University Agricultural Research Station)

Ground lamb from purebred landrace hair sheep lambs (PB) and crossbred wool × hair sheep lambs (CB; Dorset terminal sire) was used to evaluate the influence of breed and supplementation on consumer acceptance and preference. Lambs (n = 47, mixed-sex), raised, were grazed on tall fescue only (PAS) or supplemented with soy hull (SUP) at 2.0% of body weight for 90 days during summer before harvest in a USDA-inspected facility. Carcasses were pooled as follows: A = PB × PAS; B = CB × PAS; C = PB × SUP; and D = CB × SUP, then deboned and ground for use in a consumer survey. Customers (n = 284) of a local food hub company randomly received a 500-g package of either the A, B, C, or D pool along with identical recipes and instructions on how to complete a survey rating qualitative characteristics before and after cooking. Information on previous consumption, the price range willing to pay, and if and how often they would purchase the product was also collected.

The survey response rate was 74% with most survey respondents (94%) having eaten lamb meat previously. Even though there were varying effects of breed and supplementation on certain attributes of the uncooked and cooked ground meat product, most respondents (> 96%) indicated that they would purchase local ground lamb if available; 59% would purchase at least once/month, and 43% indicated that they would pay a premium (> $13.2/kg) for ground lamb meat. This indicates that ground meat from hair sheep lambs could enhance the profitability of small-scale small ruminant farms in Virginia.

A New Crop for the Mid-Atlantic: Hop Cultivar Trials at Virginia Tech
Holly L. Scoggins and Margaret Aiken (Department of Horticulture, Virginia Tech); Laura Siegle (Virginia Cooperative Extension-Amelia County)

Interest in craft beer has increased demand for local ingredients (hops and malted barley), by brewers and end-product locavores. Hops (Humulus lupulus L.) and their flowers, the primary flavoring and aromatic ingredient in beer, are commercially grown on large farms in the Pacific Northwest (PNW). Media reports on the explosive growth of the craft brewing industry in the Mid-Atlantic (MA) has sparked considerable interest in a diverse group including beginning and experienced farmers, vineyard and nursery owners looking to diversify, and land owners with no experience but a keen interest in beer. Little information exists on production protocols or cultivar performance in the MA, which has a more difficult growing environment, smaller hop yards (less than 2 acres on average), and lower yields. Additionally, hops are an expensive crop to grow, with yard establishment costing up to $15K/acre.

Because most cultivar and production recommendations are based on observations in the PNW, trials were established at Virginia Tech in 2015 to provide MA-specific data for 16 cultivars. Data taken includes: main stem and laterals length at flowering, days to flower, cone (flower) production (wt. weight and dry weight), acid and flavor profile analyses through the Virginia Tech Hops Analysis Lab. We created a “Hops at Virginia Tech” Facebook page to help communicate research updates and hop-related programs at VT and around the state. An open house and field day for small farmer stakeholders, extension agents, and the general public will be held each summer.
Management of Small Wood Lots

Joel Koci, Marcus Comer and Richard Reuse (Virginia State University Cooperative Extension)

Sustained clearing of previously forested land for development and farmland has resulted in fragmented wood lots that are prone to soil erosion, colonization by invasive plant species, and loss of wildlife habitat. Common invasive plants in Virginia include Tree of Heaven (Ailanthus altissima), multiflora Rose (Rosa multiflora), Japanese Honeysuckle (Lonicera japonica), and Autumn Olive (Elaeagnus umbelate).

Based on soil conditions native plants could be installed to reduce the entry of invasive species. These natives can also aid in erosion control, and encourage animal populations by providing cover, providing food, and sustaining the ecosystem. Where a property is already infested with invasive plants, knowledge of invasive plant cultural and physical requirements is essential for developing removal strategies and preventing their reestablishment. This poster will discuss the ecology of the various invasive plant species in Virginia, how they negatively affect the ecosystem, and the various strategies that can be employed in their control.

Shade Affects Yield and Botanical Composition of Forage Mixtures for Silvopastures

Kelly Mercier and Chris Teutsch (SPAREC, Blackstone, VA); John Fike (CSES, Virginia Tech, Blacksburg, VA); John Munsell (FREC, Virginia Tech, Blacksburg, VA); Gregory (USDA Forest Service, Southern Research Station, Research Triangle Park, NC)

Increasing interest in silvopastures is being shown in Virginia and surrounding states. Compared to pastures, forages in silvopasture systems are subject to different microclimatic conditions that may impact species diversity and forage yield. The objective of this experiment was to evaluate the impact of differing shade levels on the botanical composition and yield of simple, intermediate, and complex cool-season forage mixtures. This study was conducted...
at Virginia Tech’s Southern Piedmont Agricultural Research and Extension Center located near Blackstone, Virginia. The experimental design was a random complete block with four replications. Slatted shade structures were used to create three different shade levels (25, 50, and 75% shade) for comparison with a full sun control. In early April, 2015, three cool-season forage mixtures of varying complexity were planted. Shade structures were placed over plots immediately after planting in order to mimic natural shading. Harvest occurred twice during 2015. Yield at the first and second harvest decreased (P < 0.03) by more than 35% as shade level increased above 25%. Mixture complexity had no effect (P > 0.59) on yield. The proportions of tall fescue, orchardgrass, and red clover in the intermediate and complex mixtures generally peaked at 50% shade, indicating that these species should be well adapted for use in silvopastures. Birdsfoot trefoil and Kentucky bluegrass were not prominent. All mixtures had fewer (P < 0.04) weeds with shade. Shade appeared to hinder the growth of summer grasses and annual broadleaves, which could enhance initial forage establishment in spring seedings.

Sweet Potato Yield and Consumer Preference for Thirteen Varieties Grown Organically in Virginia
Leonard Githinji and Hui Gao (Virginia State University Cooperative Extension)

Growers are interested in knowing the yield and marketability of sweet potato as both variables determine profitability of a sweet potato enterprise. A study was carried out at Virginia State University’s Organic Research and Demonstration site located at Randolph Farm, Petersburg, Virginia, to determine the yield and consumer preferences of 13 varieties of sweet potato. These were Beauregard, Bellevue, Bonita, Burgundy, Covington, Ginseng, Hayman, Murasaki, O’Henry, Orleans, Porto Rico, Purple (Stokes), and Vardaman.

The experiment was laid out as a complete randomized design with three replications established on 20-ft rows with 24 by 48 inches intra- and inter-row spacing, respectively. The slips were planted on June 18, 2015 while digging of roots was done at 105 and at 120 days after transplanting (DAP). During the growing period, the beds were watered twice each week for two hours per irrigation event using a drip irrigation system, and no fertilizers or pesticides were used.

The total yield ranged from 6,897 lbs/ac for Hayman to 17,860 lbs/ac for Bellevue at 105 DAP and 6,824 lbs/ac for Vardaman to 17,860 lbs/ac for Bellevue at 120 DAP. For the consumer preference, the most desirable characteristics were reported for Burgundy (8.4 out of 9.0) while the least desirable characteristics were reported for Bonita (6.0 out of 9.0). We conclude that this information will be useful to current and potential sweet potato growers for planning their production enterprises.

Sweet Potato Yields among Vegetable Farmers and Variety Performance in Southeast Virginia
Ramon A. Arancibia and James Jennette (Eastern Shore AREC, Virginia Tech); Stephanie Romelczyk (VCE-Westmoreland County); Roy D. Flanagan (VCE-Virginia Beach County); Scott Reiter (VCE-Prince George County)

Consumption of sweet potato (Ipomoea batatas) has increased in the past decade in part due to its nutritional and health attributes, and the availability and convenience of processed products. A survey was conducted in 2015 on farmers from Virginia’s Eastern Shore, Northern Neck area, and Virginia Beach and Dinwiddie Counties to evaluate production status and potential for improving management practices and sustainability of vegetable crop farmers.

Most sweet potato fields surveyed ranged between 2 and 4 acres except one organic field in the Eastern Shore with 30 acres. Four 1-row plots 10ft-long were randomly selected per cultivar per farm and hand harvested to determine yield by USDA standards. Cultivars included Covington, Beauregard, Bellevue, Burgundy, Diane, Evangeline, Bonita, and O’Henry. In addition, a variety trial with the most recently released sweet potato varieties was conducted at the Eastern Shore Agricultural Research and Extension Center. The experimental design was a CRB with four replications and plots consisted of one 20ft-long row planted at 12 by 36 inches.

Marketable yield among all cultivars from surveyed commercial fields ranged from 340 bushel/acre to over 1,100 bushel/acre. Irrigation appeared to be the main factor for the significant differences in yield. Marketable yield from the variety trial at the Eastern Shore AREC ranged between 741 and 956 bushel/acre. These yields are well within the yields obtained in the main sweet potato producing states. In addition, a preliminary economic assessment indicated that sweet potato has a positive net return and when irrigated is an excellent crop for vegetable crop farmers.

Soil Solarization Integrated With Corn Gluten Meal, Mustard Seed Meal and Paper Pellet Mulch in Annual Strawberry Plasticulture Production System in Virginia
Sanghamitra Das and Jayesh Samtani (Virginia Tech)

The strawberry fruit is known for its bright color, fleshy fruit and characteristic aroma but production may be challenging due to presence of soil borne pests. Weeds if unattended will compete for nutrients, moisture and reduce crop yield. Pre-emergence herbicide options for strawberry production are limited, and fumigants adopted after the phase out of methyl bromide face increasing regulatory constraints including the need for maintenance of buffer zones.

A field study was set up at Hampton Roads Agricultural Research and Extension Center, City of Virginia Beach, in 2014-15 and 2015-16 growing seasons, in a randomized complete block design with four replications using ‘Chandler’ cultivar. The objective was to look at alternative strategies with 3 week pre-plant soil solarization (SS) integrated with corn gluten meal (CGM) at 1710 kg/ha, mustard
seed meal (MSM) at 1121 kg/ha, and paper pellet mulch (PPM) at 3662 kg/ha and evaluate treatment effects on crop health, weed control, and crop yield.

Cumulative total weed density for the 2014-15 growing season was not significantly different, but in the 2015-16 growing season, weed density was lower in plots treated with SS, SS+MSM, and SS+PPM. PPM and SS+PPM plots had higher marketable yield than MSM+CGM and CGM plots, but not significantly different from untreated plots. Longer periods of soil solarization and PPM rates merit further evaluation.

Teff (Eragrostis tef) as a Potential Dual-Purpose Small Grain in the Mid-Atlantic Region

Vitalis Temu, Christos Galanopoulos and Asmare Atalay (Virginia State University Agricultural Research Station)

In the mid-Atlantic US, demographic changes have increased interest in teff (Eragrostis tef), Ethiopia’s drought-tolerant small grain with unique nutritional benefits. For celiac disease patients, teff is a gluten-free healthy alternative with a complete amino acid profile and unusually high levels of Fe and Ca. The growing demand for teff and its major food products provides economic opportunities for Virginia Agriculture.

To establish how soil mineralogical composition might affect grain yield and quality, a randomized complete block design trial with two varieties and four Virginia soil-type series was conducted. For each variety and soil-type, eight potting tubes (5 cm × 40 cm) were seeded and watered sufficiently (about field capacity), but not fertilized. A week after planting, seedlings were thinned down to 3-5/ tube and plant height measurements, tiller counts, stem jointing, and flower appearance recorded, bi-weekly. From early flowering, plants were supported vertically to minimize stem damage and shedding. At seed maturity, plants were clipped (about 2.5 cm height), air-dried, and weighed then hand-threshed to determine respective shoot biomass and air-cleaned grain yield, per tube.

For each variety, vegetative growth was relatively faster on Bojac and Bourne than Cullen and Emporia soil series with greater biomass (15.3 g) and seed (4.6 g) from Bojac than all other soils. These preliminary results indicate a great potential for grain teff production in Virginia and that soil type differences may significantly influence its agronomic performance across a landscape. Results of chemical analyses on the harvested material and studies involving various soil amendments will provide additional information.

Application of Blanching, Packaging, and Cold Storage to Extend Shelf-Life of Edamame

Chyer Kim, Laban Rutto, Yixiang Xu, Edward Sismour, Guo-Liang Jiang and Maru Kering (Agricultural Research Station, Virginia State University); Antoinette Torres (Department of Biology, Virginia State University); Steven Pao (California State University, Fresno)

Edamame is a large-seeded green vegetable soybean [Glycine max (L.) Merr.] that is emerging as a promising cash crop for Virginia farmers, especially in the wake of declining tobacco production in the state. The reported health benefits of edamame and its characterization as a “superfood” have contributed to its rise in popularity among American consumers, creating a potential niche market for small scale producers. However, issues related to the short shelf life of the product present challenges in marketing edamame.

This study investigated the use of a combination of high temperature short time (HTST) blanching, vacuum packaging, and cold storage for prolonging the physical and microbiological quality of edamame. HTST blanching significantly increased the green color intensity of edamame. At the same time, the hardness of whole pods did not significantly change. HTST significantly reduced overall microbial counts (>4.0 log CFU/g) with no significant increase observed during 4°C refrigeration for < 9 days.

The current study demonstrated that cold storage at 4°C can effectively prevent the proliferation of microorganisms on treated produce. It also showed that microbial counts can rebound on treated produce if stored at room temperature (22°C). The combination of methods used in this study are environmentally friendly and easily adaptable to a small farm setting, giving it great potential as tools for small farmers who wish to increase profitability by extending the shelf life of their edamame harvest.

Good Aquaculture Practices (GAqPs) for Ponds

Brian Nerrie, David Crosby and Chris Mullins (Virginia State University); David Kuhn and Michael Schwarz (Virginia Tech)

Good Aquaculture Practices (GAqPs) are activities, procedures, or considerations optimizing production systems and management protocols to maximize environmental and economic sustainability, final product quality and safety, animal health and worker safety, while concurrently minimizing the likelihood of a disease outbreak.

GAqP considerations generic to all aquaculture production systems include considerations for: Regulatory and non-regulatory compliance, facility siting and design, source water, facility security, animal health, feed management, record keeping and employee training.

This poster will discuss GAqP considerations for ponds. Pond aquaculture is farming in impounded good quality water with a maximum depth of eight feet using various levels of intensity. Smooth impervious clay bottoms with a minimal slope allow easy seine harvesting. Commercially available feed is broadcast to the crop and water quality parameters, primarily dissolved oxygen concentration, are maintained.

Good Aquaculture Practices (GAqPs) for Recirculating Aquaculture Systems

Michael Schwarz and David Kuhn (Virginia Tech); David Crosby, Chris Mullins and Brian Nerrie (Virginia State University)

Good Aquaculture Practices (GAqPs) are activities, procedures, or considerations optimizing production systems and management protocols to maximize environmental and economic sustainability, final product quality and safety, animal health and worker safety, while concurrently minimizing the likelihood of a disease outbreak.
GAqP considerations generic to all aquaculture production systems include considerations for: Regulatory and non-regulatory compliance, facility siting and design, source water, facility security, animal health, feed management, record keeping and employee training.

Recirculating Aquaculture Systems (RAS) are aquaculture systems which recycle greater than 90% of the system volume on a daily basis. Some RAS-specific GAqPs include tank shape and water flow orientation so tanks act as primary solids collection devices. Furthermore, tank water exchange rates with filtration systems should be 100 to 200%/hour, with 10% of this volume coming from solids collection in the tank direct to solids filter, and 90% of tank flow going from the tank direct to the biofilter, and back to the tank. Makeup water should 1st go through disinfection, and be introduced via the biofilter or sump. Systems should be maintained in proper working condition, and never be stocked at densities beyond design specifications. As RAS are intensive in nature, extra biosecurity considerations should be implemented above standard protocols. These may include sterilization of all incoming water, entry and exit disinfection foot bath and hand washes, restriction of unauthorized personnel, purchase of only Specific Pathogen Free animals for restocking, and careful monitoring of all water quality parameters multiple times a day, or continuously via automation.

Good Aquaculture Practices (GAqPs) for Cage Production

David Crosby, Brian Nerrie and Chris Mullins (Virginia State University); David Kuhn and Michael Schwarz (Virginia Tech)

Good Aquaculture Practices (GAqPs) are specific best management practices (BMPs) applied to aquaculture production systems. GAqPs are designed to maximize production, improve feed conversion, reduce disease outbreaks, and be environmentally friendly. These are just a few practices that GAqPs can do to improve production for fish farmers.

Cage production has its particular GAqPs such as the number of fish stocked per cubic foot of water in a cage. Cage production uses a netting material in various geometric structures (round, square, rectangular) that allow for the exchange of water between the cage for growing fish and the pond. Growing fish in cages is a relatively common practice for beginning fish farmers. By using cages, a farmer has easy access to harvest fish for markets. It is recommended that a beginning fish farmer starts off with raising 250 rainbow trout in a 4ft round cage to learn GAqGs for cage production.

This poster will discuss GAqPs for cage production with regard to stocking density, cage design, cage placement, fish suitable for growing in cages, water quality, fish health, feeding practices, and pond requirements.

Good Aquaculture Practices (GAqPs) for Harvest and Post-Harvest Handling

David Kuhn and Michael Schwarz (Virginia Tech); David Crosby, Chris Mullins and Brian Nerrie (Virginia State University)

Good Aquaculture Practices (GAqPs) are activities, procedures, or considerations optimizing production systems and management protocols to maximize environmental and economic sustainability, final product quality and safety, animal health and worker safety, while concurrently minimizing the likelihood of a disease outbreak. GAqP considerations generic to all aquaculture production systems include considerations for: Regulatory and non-regulatory compliance, facility siting and design, source water, facility security, animal health, feed management, record keeping and employee training.

The key to providing your market with a safe and high quality product is to understand and follow GAqP recommendations for proper pre-harvest and post-harvest handling. GAqPs for pre-harvesting and harvesting activities focus on maximizing the quality of the product, as well as minimizing stress on the animal. Product that is consistently safe and of the highest quality is paramount for maintaining sales and maximizing value in the market place. Therefore, food safety is one of the most important considerations during postharvest handling. Pathogenic bacteria, chemicals, and mechanical items are all food hazards that could compromise a product entering the market place. The presence of pathogenic bacteria can be minimized by ensuring all surfaces, equipment, personnel, and any other item that comes into contact with the product are clean and sanitized.

This poster will discuss federal regulations and recommendations for developing a hazard analysis and critical control points (HACCP) plan for all of your processing efforts. HACCP is a systematic preventative approach for ensuring that each of you processing, packaging, and storage steps do not compromise product quality and safety.

Good Aquaculture Practices (GAqPs) for Aquaponics

Chris Mullins, David Crosby and Brian Nerrie (Virginia State University); David Kuaha and Michael Schwarz (Virginia Tech)

Good Aquaculture Practices (GAqPs) are activities, procedures, or considerations optimizing production systems and management protocols to maximize environmental and economic sustainability, final product quality and safety, animal health and worker safety, while concurrently minimizing the likelihood of a disease outbreak. GAqP considerations generic to all aquaculture production systems include considerations for: Regulatory and non-regulatory compliance, facility siting and design, source water, facility security, animal health, feed management, record keeping and employee training.

Aquaponics is the integration of a hydroponic plant production system with a recirculating aquaculture system. A hydroponic system (closed or open) involves growing plants without soil i.e. in only nutrient solution or in some type of artificial media. A recirculating aquaculture system (RAS) most often is the production of fish
in a closed system where water quality is maintained through a filter system. Independently, hydroponic systems and RAS can be productive and commercially viable. However, the integration of the two systems requires more extensive management intensity with selection and management of the fish and plant crops being critical. Proper design of the system components including: fish tanks, plant production unit, mechanical filtration, biochemical filtration, greenhouse and water movement system is key to the success of an aquaculture enterprise.

WASHINGTON

Bovine Respiratory Disease Risk Reduction from Bloodlines to Fencelimes

Susan Kerr, Don Llewellyn, Sarah Smith and Tip Hudson (Washington State University Extension); Dale Moore, Andrew Allen, John Wenz and Sandy Poisson (Washington State University Veterinary Extension); Shannon Neibergs (Washington State University School of Economic Sciences)

The 2007-2008 USDA National Animal Health Monitoring System Beef Study documented that Bovine Respiratory Disease (BRD) is a serious production risk for U.S. beef cow-calf producers: respiratory disease is the most common cause of death in calves over three weeks old. The Washington State University Beef Team, already engaged in a five-year USDA-funded project titled “An Integrated Approach to Control of Bovine Respiratory Diseases,” obtained additional funding from the Western Center for Risk Management Education to fund an educational outreach series for cow-calf beef producers.

Outreach involved presenting newly-developed, evidence-based educational materials to cow-calf producers throughout the state. Team members conducted workshops in seven locations, directly reaching 165 producers. At each workshop, producers completed a self-assessment of their ranch’s BRD risk; received notebooks with 11 educational modules; interacted with Extension professionals; and were encouraged to request an on-farm BRD risk assessment conducted by team members. Educational module topics focusing on reducing BRD risk included: Managing pregnant cows, Calving management, Optimizing calf care, Weaning Procedures, Cattle Handling, Vaccinations, Preconditioning, Transportation, Biosecurity, Health at feedlot arrival, and Documenting BRD incidence and health costs.

An audience response system was used to measure knowledge gains immediately after each workshop. Results indicate substantial increases in all evaluated areas. The Top Ten Management Risks were identified from 93 producer self-assessments. Team members conducted 14 on-farm assessments and identified specific on-farm risks for participating producers. These data will inform the focus of future outreach and help producers develop management plans to lower the BRD risk of their herds.

WEST VIRGINIA

Green Thumbs - Healthy Joints - Accessible Gardening

Inetta Fluharty and Carmen Fullmer (West Virginia State University)

A joint partnership between WV AgAbility and the WV Bureau for Public Health Osteoporosis & Arthritis Program was formed to support organizations working to make gardening accessible for West Virginians with arthritis and other disabilities. Through collaboratively administered community mini-grants, funded recipients have brought accessible gardening, related assisted technology, and subsequent health benefits to numerous settings across the state.

This poster will explore the project’s partnership and funded projects. The poster will also cover how grants are administered, technical assistance provided by staff and project reporting and evaluation. Past and current projects will be presented showing how implementation of accessible gardening has grown from simple raised flower beds to accessible outdoor classrooms.

Junior Master Gardener Grown: Programs Utilizing JMG Curriculum in non-traditional 4-H Settings

Shelley Whittington, Tabitha Surface, Jenny Totten, Nikki Erwin, Valerie Bandell, Brianna Hairston, Melissa Stewart, Kelli Batch and Ami Smith (West Virginia State University Extension)

While the Junior Master Gardener (JMG) curriculum is well-researched and built for easy implementation by educators with little previous knowledge of gardening, it might not lend itself to non-4-H specific settings. However, at West Virginia State University Extension Services (WVSUES), JMG has been used as a base to create measurably successful programs with varying aims and populations.

WVSUES has exploited JMG’s adaptability to fit unique local populations and community specific needs. SCRATCH, Sustainable Community Revitalization Through Children’s Hands; PLANTERS, Preschoolers Learning Agriculture, Nutrition, Technology, Engineering, Reading and Science; GROWTH---Gardening, Reading, Opportunity, Wealth, Teamwork, Health; and the Backyard Habitat are four sustainable endeavors of WVSUES. SCRATCH teaches entrepreneurship and fiscal literacy through the production, harvesting, and marking of goods; PLANTERS adapts JMG curriculum for preschoolers as one arm of its endeavor to increase STEM learning with GROWTH as its counterpart for older students, utilizing JMG while expanding beyond its bounds (both programs are classroom based). Finally, The Backyard Habitat focuses on outreach, taking JMG concepts to low-context participants, creating first exposures to Extension to increase community awareness of Extension and positive associations with natural science and garden-based education. Each program begins the work of cultivating future farmers through education, exposure, and framing farming as a viable career option. Through the poster, program impact will be enumerated via the disclosure of participant numbers, frequency of interactions, and other data collected over the life of each program.
# Success Stories Summary

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Success Stories

ARKANSAS

Armed to Farm: Soldiering the Success of Military Veterans in New Poultry, Livestock and Agroforestry Enterprises

Sarah B. Wright, Komala Arsi, Casey Owens, H. L. Goodwin and D. J. Donoghue (University of Arkansas); A.M. Donoghue, J. M. Burke and D. H. Pote (USDA); M. Hale (NCAT); T. Spencer (Across the Creek Farm); M. O’Gorman (FVC); S. Jose (University of Missouri); A. C. Fanatico (Appalachian State University); O. J. Gekara (University of Arkansas at Pine Bluff)

Farming offers a viable avenue for returning veterans to transition into society and capitalizes on skills that made them successful in the military. The goal of this project is to develop and expand on a personalized comprehensive/integrated educational program that provides military veterans beginning farmers with relevant information and practical skills to succeed in agricultural enterprises. The objectives of the program are to: 1) Enhance existing course materials and add training modules to our New Farmer Online Training Program and develop customized materials specific to veterans; 2) Provide experiential learning opportunities including Armed to Farm Workshops and trainings, on-farm demonstration and internships; and 3) Develop and expand on networking and mentoring opportunities to effectively support a new generation of farmers. In the first year of the project, over 300 participants were impacted through on-farm, face-to-face workshops, and conferences. Additionally, >5,000 participants have accessed our online training program. Farmer participants increased knowledge through two hands-on workshops; one focused on agroforestry practices and an on-farm training focusing on sustainable livestock production held at a working farm. Over 80 veterans were sponsored through our program to attend the 2015 and 2016 Southern Sustainable Agriculture Working Group conferences and attended networking sessions focused on veteran farmers’ needs. To date, our military-veteran farmer mentors have hosted 6 on-farm interns with >3050 internship hours logged. More programs develop for veterans in agricultural disciplines, lessons learned from our partnership with veterans may be beneficial to those working with this population of farmers. Funded by USDA-NIFA-BFRDP 2014-07424

The National Strawberry Sustainability Initiative

Curt Rom, Heather Friedrich, Luke Freeman, Ron Rainey, Jennie Popp and Jun Zhu (Center for Agricultural and Rural Sustainability, University of Arkansas)

The National Strawberry Sustainability Initiative (NSSI) was a public-private partnership between the Walmart Foundation and the University of Arkansas System Division of Agriculture Center for Agricultural and Rural Sustainability, from 2013-2015. The NSSI was created with the intent of moving science-based technology from laboratories and experiment farms into producers’ fields, distribution systems, and other industry operations. The project goals were to expand seasons and regions of production, reduce environmental impacts, decrease energy consumption, limit product loss in the supply chain, and to improve profitability for farmers.

Over the two years, $3.5M competitive grant funds were awarded to twenty-six projects at land grant universities across the US. Through the projects and partnerships, over 100 workshops, demonstrations, and field days were conducted, 100+ on-farm trials, 169 presentations were given to technical and scientific groups and 80 videos were produced. Workshop information reached 7100 growers and consultants, and 2000 extension agents. The project generated a digital diagnostic tool, interactive strawberry production budgets, and production guides for cold climates and Texas. The potential for producing strawberries out of season in many regions of the country was demonstrated with use of greenhouse hydroponic systems and high tunnel technologies. Projects tested new strawberry cultivars, patented three genotypes and released one new cultivar; tested and demonstrated sustainable soil management practices; developed organic strawberry production system; and implemented precision technology for conservation water management and frost protection.

Accomplishments of the NSSI are highlighted in two award-winning e-books, “Moving the Needle: Accomplishments of the National Strawberry Sustainability Initiative” and “Success in the Field: Accomplishments of Phase II of the National Strawberry Sustainability Initiative” found at http://strawberry.uark.edu.

CALIFORNIA

Workshop on Wheels: Market Tours for Small, Beginning and Underserved Farmers

Gwenael Engelskirchen, Gail Feenstra, David Visher and Thomas Nelson (UC Sustainable Agriculture Research & Education Program, UC Davis)

UC Sustainable Agriculture Research & Education Program’s “Meet the Buyer” bus tours connect small, beginning and underserved farmers with wholesale buyers. These tours provide an opportunity for farmers to meet face to face with wholesale buyers and learn first-hand about standards for receiving, packaging, labeling, and other required wholesale procedures. Getting a grasp of these procedures can be daunting for many small farms. The tours demystify processes and regulations and give farmers a chance to build relationships with buyers. From 2014-2016, the tours served 170 farmers and 22 food system partners in California. Tours are supported by UC Cooperative Extension farm advisors in the tour service area. This collaboration links university resources with practical, in-the-field support, creating a comprehensive strategy for assisting small and mid-scale farms with their marketing challenges.

This project demonstrates the role that university programs and cooperative extension play in supporting small-scale farmers in exploring new market channels. Based on written evaluations, participants each made an average of five new contacts; 88% of participants indicated that they were likely to follow up again with these contacts after the tour and 78.2% of participants indicated they were somewhat or very likely to pursue new wholesale business
channels as a result of the tour. Farmers indicated a confidence score of 4 on a 0-5 scale for finding new markets for their produce after the tour. Overall, participants expressed heightened levels of confidence in approaching buyers, learned about wholesale procedures, and gained an understanding of standard protocols.

FLORIDA

Telling Their Stories: USDA and North-South Institute Partnership Serving New and Beginning Farmers 2016

Sam Scott (Executive Director, North South Institute, Davie, FL)

The faces of new and beginning farmers is becoming more diverse and the rising need for local and sustainable farm to table food is, in our opinion, one of the main drivers of this new trend. USDA has unveiled a “New Farmers” website which includes in-depth information for new and beginning farmers and ranchers. The website is an excellent resource for new farmers and ranchers and highlights all of the USDA programs that can be used to start and expand their farm business operation. In addition, for those who have not been engaged in agriculture or who are language and literacy challenged USDA has developed some key outreach partnerships on the ground. The following are summaries of successful operations of new and beginning farmers who are receiving USDA program support through a partnership between the North-South Institute and USDA Agencies to include OAO, FSA, NRCS, AMS, and NIFA.

“I just want to get the right information to make this transition for myself and my fiancé a smooth one” says Lucy S, a vice president of business affairs working in cooperation America who has started a small livestock farm in Florida. She supplies organic eggs, raises chickens, ducks and goats. In addition to this she rescues animals.

“I am so grateful for the workshops and all of your help” says Mr. Charles W, a retired veteran who is a new farmer in Central Florida. “I am now able to use the information I have been researching to not build my farm but also to form a new Agriculture Cooperative that you have helped us with.” These new farmers want to use their skills and expertise that they have acquired from their years of working in others fields, and the North South Institute, with the funding from USDA, has been using the valuable USDA resources to help. Charles’ team is developing a marketing services coop to assist over 35 farmers producing organic eggs, free range chickens, ducks, goats, cattle and vegetables.

Mr. Carlos M is one of the farmers in this cooperative group who applied for a farm loan. He says that “I understand the process more know and without your help this would be impossible for me.” Carlos is a cattle farmer who has a niche market of people who will buy an entire cow just to eat local. This type of direct marketing is very beneficial to him because it fetches a higher price for his animals. “I resigned from my job as Deputy Chief in St Lucie County because I love spending time with my family and I earn more farming. I want to expand my farm but I need help” says Carlos. He has four children, a wife and two dogs. His farm expansion will increase his monthly income and with the increasing demand for beef globally, he is heading in the right direction.

The faces of new and beginning farmers are changing, but their love for agriculture is the same. They all want the same thing which to be engaged in farming as a business operation that they can be proud of and support their livelihood. Although their farming enterprise may not be large, their impact in our community is big. This is why the North South Institute works diligently to share all of the USDA programs to each farmer in a manner that they can understand and use.

As Secretary Vilsack says, our farmers, young or experienced, small or large, new or beginning or veteran, all help to build some of the world strongest enterprises in the world. This is a testament to the resilience of all US farmers and the types of programs USDA provides for each and every one.

KENTUCKY

Helping Farm Families to Improve Their Qualities of Life

Edwin Chavous, Marion Simon and Louie Rivers (Kentucky State University)

Situation: Often, limited-resource farm families have sub-standard housing. Their roofs leak, there is no bathroom, or the houses or trailers are in major disrepair. Some need improved heating or cooling, and many need improved ventilation. Their potable water supply is often a problem. Many have cisterns, untested wells, or the county’s waterline is not available. Plus, in cases where the farmer is a tenant, the property owner may not want to make needed improvements. Often banks turn the farmers down for home improvement loans and they do not know where to go for help.

Intervention: KSU’s 2501 Area Small Farm Agent in central Kentucky, with some Appalachian and Strike Force Zone counties, connects needy families with USDA Rural Development, Kentucky Housing, and reasonable contractors. He mentors the family throughout the process, from helping them to identify the needs and investigate possible solutions, to assisting them with their loan and grant applications, to follow-up to help them maintain their improvements. He also enrolls families with wells into the Extension Well Testing program.

Results: Through intervention farm families can improve their housing and quality of life. The Agent has helped some 25 limited-resource families from eight counties to improve their housing. Positive relations have been developed between farm families and their neighbors with USDA Rural Development. He has identified that the time this process takes depends on how aggressively the family collects and packages the information for the agency, which can be from three months to nearly a year.
Extension Programs Develop Networks that Stress Diversity

Shelley Spiggle, Marion Simon, and Louie Rivers Jr. (Kentucky State University)

Situation: Small farmers need to develop support networks and acknowledge diversity.

Intervention: Kentucky State University has used several venues to develop networks, diversity, and acceptance among Kentucky's diverse small farmers. In doing so, KSU addresses the cultural, ethnic and gender diversities of program participants.

Results: In addition to its intensive educational Small Farm Program and 2501 Program that emphasize small, beginning, limited-resource, socially disadvantaged, veteran, Appalachian, and women farmers, and farmers with disabilities, the following venues have proved to be successful. KSU’s Small, Limited-Resources, Minority Farmers Conference was the first venue that united African American farmers from central and western Kentucky and has become the largest gathering of African American farmers in the Commonwealth, while also including veteran, women, Hispanic, Asian, refugee, Native American, and small farmers all learning and socializing together as one. Similarly, “The Third Thursday Thing” monthly workshops have put similar groups of farmers together in settings that emphasize learning and social acceptance. But many of the strongest ties among the diverse farm populations in Kentucky came from KSU’s educational farmer bus tours to various events such as tours to the annual Southern Sustainable Agriculture Working Group conference and the annual meetings of The Federation of Southern Cooperatives. Not only do the conferences build networks and diversity across state lines, the University bus rides themselves provide ample opportunities for diverse populations living in Kentucky to interact with each other another and build community.

Using Pastured Poultry to Build Networks with Diverse Farmers

Steven Skelton, Marion Simon and Tehran Jewell (Kentucky State University)

Situation: Kentucky’s small farmers and former tobacco producers are looking for affordable farm enterprises that produce ready cash. Pastured poultry is one alternative. Producers can rent Kentucky State University’s mobile processing unit to meet food safety regulations. It may seem strange, but the processing training and unit rental has provided not only new value-added products, but has built relationships among diverse groups of farmers.

Intervention: First, the poultry are small. Several disabled and partially disabled farmers and veterans from across Kentucky and other southern states produce pastured poultry because poultry are small. The broilers’ size appeals to women who want low-cost farming opportunities that they can do themselves. For limited-resource, refugee, and beginning farmers, pastured poultry provides a relatively inexpensive farm enterprise. With many of Kentucky’s Appalachian coal mines closing, pastured poultry is being introduced as a low cost enterprise for sale and family consumption. Pastured poultry has also proved to be popular among African American and socially disadvantaged farmers.

Results: Pastured poultry producers tend to network together. At certification trainings, women and men learn together. The Farmer2City Connection is one of Kentucky’s strongest networks. This cooperative of African American beginning farmers in south-central Kentucky produce and process value-added broilers for sale locally and into the food deserts of Louisville, KY. They are no longer isolated, but are working with farmers in their community, Extension Agents, their community officials, and decision-makers across the state. Together this group of farmers has become a leader in Kentucky’s local food movement.

African American Farmers are Leaders in KY’s Local Food Systems

Tehran Jewell, Marion Simon, Steve Skelton and Louie Rivers Jr. (Kentucky State University)

Situation: Tobacco was the primary farm income for 90% of Kentucky’s African American farmers. Few were trained in direct marketing, local food systems, and/or food safety.

Intervention: KSU’s Area Small Farm Agent began working with a group of African American beginning farmers in south-central Kentucky in 2002, teaching them about local food systems and low cost farming opportunities. He helped them to develop the Farmers2City Connection cooperative and continues to assist and mentor them with their farming operations, marketing, food safety activities, and the use of USDA agencies.

Results: These farmers produce healthy foods which they sell locally and in the food deserts of Louisville, KY and Nashville, TN. They want to improve the health of these populations by providing healthy local foods into their communities. Two of the farmers graduated from the 1890 Small Farmer Leadership Institute, one graduated from Western Kentucky University, 12 implemented new farm enterprises including pastured poultry, honey bees, vegetables, and value-added beef and pork operations, one built NRCS high tunnels, eight use KSU’s vegetable equipment, one produces tilapia in a high tunnel, and one applied for an FSA farm loan. Upon Michelle Obama learning of this, one producer was invited to the White House to participate in her Healthy Local Foods Conference to share his success.

Identifying and Supplying Markets with Ethnic Crops in Food Deserts

Maria Moreira, Joanna Benoit and Jessy Gill (World Farmers)

A program of World Farmers, Flats Mentor Farm has a 30-year history of providing land, training, and technical assistance to small, underserved, immigrant and refugee farmers in Lancaster, MA. The Flats Mentor Program supports these farmers at the marketplace and assists in their transition to growing in a climate and culture not

SUCCESS STORIES
their own. Our Success Story will highlight how this program has identified the needs of ethnic communities for culturally diverse and appropriate crops in food desert communities in the Greater Boston Area.

Mattapan and Brockton, two neighborhoods right outside of Boston, are home to a diverse immigrant population. These communities typically struggle to access culturally appropriate foods at their available markets. Often times, people who live in these towns do their shopping at corner stores and ethnic markets. Our story will focus on the crop Lalu, a popular leafy-green not often found in the United States, but beloved by communities from Haiti, Egypt, and others. World Farmers identified and accessed this new market, and built the capacity of farmers in our program to produce Lalu at a commercial level to meet demand. In this effort, Flats Mentor Farm’s farmers built their capacity for growing commercially, and discovered a new way to become financially stable in their farming enterprise. In short, Flats Mentor farmers were able to supply cultural produce to food insecure populations, and in turn our farmers were able to grow capacity and independence. Our success story will use quantitative data and pictures to show this process.

MINNESOTA

Impacts of Values-Based Supply Chains on Small and Medium-Sized Farms

Hikaru Peterson, Gail Feenstra, Marcy Ostrom, Keiko Tanaka, Heather Hyden and Gwenael Engelskirchen (University of Minnesota)

Enterprises of various scales comprise the US agricultural system. At one extreme, undifferentiated farm products are traded in commodity markets. At the other extreme are direct marketing channels, where producers interact directly with consumers.

Recently, various marketing entities that are somewhere in between these extremes have emerged, providing outlets for producers, who are too large or otherwise unsuited to sell via direct marketing but too small to compete in the commodity markets. These entities regard producers as integral members and brand their goods, representing the identities and values of the producers and/or the larger organization which elicit premiums from consumers. Some of these entities have been referred to as values-based supply chains (VBSC); others include food hubs and other cooperative marketing efforts by producers or procurement efforts by communities. The poster reports on lessons learned from the completed work to date of a USDA AFRI-funded project designed to better understand, evaluate, and improve the performance of VBSCs as profitable outlets for diverse, small- and mid-sized farms. The project team has developed a database of VBSCs with supply linkages to specific groups of small and mid-sized farms. The database helps to characterize these businesses nationwide but also highlights the limitation of information communicated online. A survey instrument has been developed to be administered in November 2016 to farmers who supply to VBSCs, which have agreed to partner with the team to achieve project goals. The team will share successes and challenges in recruiting these businesses to share their supplier lists.

NEVADA

Nevada Farmer Success Story

Carol Bishop (University of Nevada Cooperative Extension)

This success story is of a Socially Disadvantaged Beginning Farmer who, through one-on-one mentoring was able to obtain a farm ownership loan.

Art Ayala-Martinez is a former resident of California who now resides in Las Vegas. His family has grown flowers for four generations. Premium prices for California fruit displaced Art’s family on their leased land there and Art’s family had no choice but to give up flower farming, sell their farm equipment and re-enter the job market.

Art moved to Las Vegas Nevada in 2006. However, his dreams of flower farming never diminished. In his spare time, Art began searching the Southern Nevada area for farmland, leased 3-acres of land, planted his first crop, established contact with major wholesalers in Las Vegas and began selling his locally grown flowers.

Carol Bishop began working with Art in May of 2015. She set up weekly meetings with Art to create a business plan, an enterprise budget and all other necessary documentation for a Farm Service Agency Farm Ownership Loan. In June, after completing his business plan and his financial documentation, Carol directly contacted his FSA Farm Loan Representative to ensure Art understood everything he needed and that the Loan Office was aware Art was a beginning farmer in addition to being a Socially Disadvantaged Applicant.

Art received a Farm Ownership loan of $70,000 allowing him to more than double his production. The decision to expand his business and become a farm owner enabled Art to restore his family’s farming legacy.

NEW JERSEY

Empowering Woman Farmers with Agricultural Business Management Training in Guyana

Robin G. Brumfield (Rutgers Cooperative Extension); Kelvin Craig (Partners of the Americas, Guyana Chapter)

In 2010, the Hydroponic Shade House Vegetable Production and Marketing Project was launched in Guyana in response to the floods and heavily saturated coastal soils to improve the economic welfare of rural households and the disadvantaged through self-employment. The objective of project, implemented and funded by Partners of the Americas and the Caribbean Self Reliance International (CASRI), was to provide rural households and the disadvantaged with the know-how, guidance and support mechanisms to be self-employed entrepreneurs with sustainable low-cost shade house vegetable production facilities. By 2013, 52 shade houses were established throughout the targeted regions. Today’s market sees knowledgeable consumers, demanding distribution networks and high quality and low price competition from domestic and international suppliers. Therefore, to gain domestic and export markets, suppliers of hydroponic grown crops have to provide the finest with the highest up-to-date quality standards at a competitive price.
Suzanne’s Project began in the Antalya province of Turkey in 2011 as a program to empower women farmers through agricultural business management training. It was envisaged that Suzanne’s Project could help empower female farmers in Guyana, beginning with the female shade house operators. In 2013, 7 female shade house growers in Guyana participated in Suzanne’s Project with 4 sessions on business management, 1 on computer skills, and 1 on technical topics. The women all completed business plans. Evaluations showed that they felt that the course was very valuable and they wish they had had the workshop sooner. Three of the women want to teach other women what they have learned. They were particularly proud of their mission statements, goals, and the fact that they understand financial statements now. They understand the importance of record keeping to calculate costs and returns and profitability and also appreciated networking with each other.

NEW YORK

Leadership in Farming Food & Health
Starry Krueger (Rural Development Leadership Network)

The Rural Development Leadership Network has worked with emerging leaders in a variety of communities to strengthen small farming operations, increase the supply of healthy locally-grown food, increase local marketing of fresh produce, enhance the income of local small land holders, make local people more aware of and receptive to healthy eating, and improve the health of families in the area.

Participating farmer leaders in Georgia, Mississippi, Alabama, New Mexico and other states have had success in this work.

Participating leaders are linked through the Rural Development Leadership Network and share their experience at gatherings and on conference calls.

Participants have the option of earning a degree through RDLN, earning credit for this field work and study.

Groundswell’s Incubator Farm: Growing Refugee, Immigrant and New American Farmers from the Ground Up
Jennifer Bassman, Elizabeth Gabriel and Devon Van Noble (Groundswell Center for Local Food and Farming)

Groundswell’s Incubator Farm (http://groundswellcenter.org/incubatorfarm/), the first of its kind in New York State, was founded in 2010 with the specific purpose of creating pathways to ownership for aspiring farmers from marginalized communities, including people of color, refugees and other New Americans. With affordable access to land, equipment, training and mentoring, Incubator Program participants can launch their farm businesses with minimal investment and risk. Through the Incubator Program, beginning farmers can develop the three-year track record needed to secure a low-interest loan from USDA Farm Service Agency or another lender, which may enable them to expand their enterprise when the time is right.

This year we are proud to say our first Incubator farmer is graduating from the farm and moving on to land to run his business independently. Next year (2017) the farm will be completely full, serving families from Burma and Iraq as well as a community of developmentally disabled folks who run a cut flower business from the farm.

In this presentation we wish to share the challenges and successes we have had over the past 5 years, the stories of the farmers and mentors working with us at the incubator, our progress at the farm as we begin plans for expansion to a second site.

Showcasing Culture and Family Values as Marketing Component in Small Family Farm Tourism.
Gloria Pontejos-Morris (MOCA Family Farm R Learning Center, Inc., The Philippines)

BACKGROUND: Moca Family Farm R Learning Center, Inc. (MFFRLCI) is a small farm owned by American family based in rural town of Padre Garcia, Batangas Province, Philippines. Gigi Morris is originally from the Philippines, husband Robert Morris is Emeritus Professor from University of Nevada Cooperative Extension. Together with their two kids, Bobby and Robby, they lead the family farm activities of MFFRLCI. MFFRLCI is around 1.5 acre in size. The family farm is a home to the Morris family in the Philippines, assisting them in the daily farm operations are extended part of their Filipino family. When they organized farm tourism events, other members of the family drives to the farm and volunteer their time, skills and expertise to make the event successful.

STRATEGY: The principal attraction of the farm is its human resources, the cultural and family values that it promotes; namely, Family, Farm, Food, Fun and Education (4Fs & 1E). Whether they are doing farm tourism activities, vegetable productions, conducting trainings, all of its activities are done in small scale measurable outputs that family members can participate. Its basic tenet in its farm operations is to “Keep it Small & Simple”.

RESULTS: The strategy has inspired other small family farm operate in the same basic principles. It is the principal mover of family farm tourism network of the Philippines, members of which are primarily small farms personally operated by family members. It has leads to the creation of networking meet-up events for family arm tourism stakeholders.
Virginia

Connecting Young Farmers with Institutions in Need

Catrien van Assendelft (Allegheny Mountain Institute); Trevor Piersol (Virginia School of the Deaf and Blind)

Allegheny Mountain Institute (AMI) provides a superlative opportunity for personal and professional growth to young farmers and local, healthy food system advocates through its 18 month fellowship program. Our success story highlights the development of AMI’s Urban Farm at the Virginia School of the Deaf and Blind (VSDB) in Staunton, Virginia by an AMI graduate and various AMI fellows. The AMI-VSDB Urban Farm enhances everything that VSDB does – from its curriculum, to experiential job training for its students, to community outreach, to its dining hall offerings. VSDB had the land and the desire; AMI provided energetic and visionary aspiring farmers trained in Permaculture Design. The Urban Farm is an excellent model for partnerships between beginning farmers and institutions that desire to have access to healthy, local food but often do not have the resources, time, or experience to get started. At the same time, our fellows have gained invaluable experience in all aspects of small farm management, including using the farm as an educational tool, managing volunteers, developing a business plan, trouble-shooting, and participating in a market. Our posters will show in images the transformation of a gravel overflow parking area into a vibrant, productive urban farm filled with community members. It will tell the story of how and in what ways this unique partnership is successful.

Virginia’s Small Farm of the Year for 2015 Success Story

Thomas H. Roberson, Jr., Anita Roberson and Julian Roberson (Botanical Bites & Provisions, LLC)

When we informed our colleagues that we were retiring from lucrative positions to grow vegetables and flowers, they thought we were crazy. Little did they know that we had planned this for years while attending various VSU small farm outreach classes. Our family would travel throughout Virginia learning about farming and the required preparations to be successful. Besides, Thomas had grown vegetables before with his grandparents.

One important class at VSU focused on farm irrigation. As we sat listening, we realized we had a lot to learn. In the past we used our well and a garden hose to water two acres. However, every year our well ran dry during the hottest part of the summer. The VSU professor explained an irrigation system designed to increase water delivery efficiency by applying water directly to the plants root system, not the entire field. By setting up a drip irrigation system we now provide adequate irrigation throughout the entire growing season. Other training benefits we gained include using a solar system generator for the well pump reducing dependency on out-sourced electricity. The technique of using row covers to protect our produce provides a more nurturing environment for our plants, pesticide free. This is another gem gleaned from VSU.

We would never have been able to do these things without the guidance provided by the many wonderful VSU Small Farm Outreach instructors whose guidance continues to make our farm a success.

Cultivating Hope Through AgrAbility Virginia: An Emphasis on the Safety, Health, and Wellness of Farmers and Farmworkers

Kirk Ballin, Joseph Young, Stephen Bridge, Tristan Robertson, (Easter Seals UCP North Carolina & Virginia); Donatus Ohanehi, Crystal Kyle, and Kim Niewolny (Virginia Tech)

Agriculture affects the lives of all community members from the food we eat to the health of the farmers who are at the heart of our subsistence. Sometimes farmers and farm workers sustain injuries, or illnesses, or experience a disability that impedes their ability to work and reach life goals. The AgrAbility Virginia program strives to enhance the quality of life of individuals and their families who farm by helping them to work safely and effectively with dignity. This program is a partnership among Virginia Tech, Virginia Cooperative Extension, and Easter Seals UCP North Carolina & Virginia.

AgrAbility Virginia uniquely integrates its programming into Virginia’s rehabilitation and agricultural service delivery system to increase organizational capacity and provide the best quality education and services for farmers. In this session, we will provide our collaborative framework, specific strategies for stakeholder outreach, health-based agricultural resources, and community-based services that address the much needed life goals of our farmworkers and farm families while, at the same time, addressing the larger issues of creating hope and farm sustainability. From the lens of community education, we especially emphasize rehabilitation, outreach, and assistance technology innovation through case examples for a diversity of agricultural contexts including, community gardens, small-scale farm families, limited-resource farmers, beginning farmers, and military veterans. We conclude with insights to collaborate with AgrAbility programs in other states to better support the safety, wellness, and quality of life of small farmers and the farmworker community.

Giles County Teaches Agriculture Through the Giles County Agriculture Land Lab

Dudding, J.L. (Virginia Cooperative Extension - Giles and Bland); Woods, B. (Land Lab Manager, Pearisburg, VA)

With the growing interest in local foods, the global issue of rising demand for more food for an increasing population, and the climbing age of the American farmer, the need for young people in the agriculture industry couldn’t be greater. In recognizing this, Giles County utilized fallow land behind and adjacent to Giles High School to develop a working farm. This farm is currently being utilized by students at Giles and Narrows High School, Giles Technology Center, Agriculture Cooperative Extension programs, 4-H, Virginia Tech Ag Technology program, and other community based groups.
SUCCESS STORIES

Since breaking ground in 2011, there is now ~35 acres of fenced pasture, ~40 acres of hay land, a small barn, a storage shed, cattle handling facilities, and 15 head of cattle. There is a 12,000sq. ft garden which produces produce for the school summer lunch program, farmer's market sales, and the Senior Center. The program has fostered 12 interns over the past two summers in addition to the students during the school year. Through the partnership with Extension, we have engaged multiple Extension Specialists, faculty from Virginia Tech, and industry professionals to complete some amazing projects. The Giles County Land Lab is still in its infancy yet has already accomplished so much. The future of this program is promising and can serve as a role model for programs across the Commonwealth of Virginia.

Local Food Systems: Setting the Stage for a Sustainable Pearisburg Community Market

Dudding, J.L (Extension Agent, ANR, Giles County, VA); Walker, M.A. (Extension Specialist, Community Viability, Central District Extension Office, VA); Vallotton, A.D. (Fresh Produce Food Safety Coordinator, Horticulture, Virginia Tech); Eifert, J.A. (Director, Virginia Tech Food Innovation Program, Virginia Tech); Morgan, K.L. (Agricultural & Applied Economics, Virginia Tech); Ferreira, G.F. (Agricultural and Applied Economics, Virginia Tech); Scott, K.H. (Extension Agent, ANR, Montgomery County, VA); Straw, R.A. (Horticulture, Fruit and Specialty Crop Specialist, SWVA AREC, Glade Spring, VA); Nartea, T.J. (Extension Specialist, Marketing /Agribusiness, VSU); Persia, M.E. (Extension Poultry Specialist, Virginia Tech)

The demand for local food in southwest Virginia resulted in the Town of Pearisburg receiving a $99,000 Farmers Market Promotion Grant for the establishment of a community farmer's market. Agricultural production/profitability, nutrition/obesity, and health continue to make the top priority list in the Giles County Situation Analysis. As a key programming partner, Virginia Cooperative Extension engaged with the town planners to design the proposal and deliver the needed food related programs. These educational efforts have been carried out through a collaboration of agents, specialists, and professors. In its first year we delivered four programs covering topics such as food safety from farm to market, product pricing and marketing, value-added product development, and a "speed-dating" event for growers and buyers. As the program has moved into its second year we have delivered three programs covering growing produce for direct sales, small-flock poultry production, and marketing strategies for direct sales. This programming effort can be mirrored by agents to meet the demands in their communities in addressing the need for a safe and adequate food supply.

The emphasis area that this success story best addresses is the outreach, training, and research priorities for underserved audiences. The main audiences at our programs have been new and beginning farmers starting into direct sales. Programming like this has been limited; therefore, we are serving an underserved audience. Markets are popping up in our region so programs of this nature are necessary not only to help "Create and Sustain Small Farmers and Ranchers" but also to sustain these markets so that fresh, local food is available.

Extension played an important role in the securing of the grant funding, however, the larger impact has been the result of special programming efforts related to local foods, farmer's market vendor training, and the establishment of networking opportunities for local growers and buyers.
# Exhibits Summary

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Exhibits

ALABAMA

Alabama A&M University’s Small Farms Research Center Outreach and Technical Assistance

*E’licia L. Chaverest and Duncan M. Chembezi (Alabama A&M University’s Small Farms Research Center)*

The Small Farms Research Center at Alabama A&M University (AAMU) conducts and promotes interdisciplinary research on the economic and social development of limited resource, new and beginning farmers and ranchers and rural entrepreneurs in Alabama’s underserved communities.

Our research focuses on risk management, food safety, land use, quality of life, and methods for studying small farms and policies for stimulating their development. We seek to advance our understanding of socioeconomic processes and our ability to explain state and county differences in rates of growth and levels of development.

Our goal is to create learning opportunities and to provide research support for those engaged in small farm and community development research, and to bring together scholars from across campus and around the nation to create an intellectually rich environment for the conduct of small farm and community development research. We sponsor seminars, workshops, and conferences, providing a forum for exchanging ideas and discussing small farms and community development research and issues. The exhibit will showcase our outreach efforts, technical assistance with our clientele, and our success stories.

Cleber, LLC Working for Small Farms

*Locky Catron (Cleber LLC)*

Cleber, LLC is the foundation for the rebirth of the small family farm. Our Open System Manufacturing (OSM) model uses nonproprietary, off-the-shelf components to provide affordable equipment that can be fixed in the field. Our first product is the Oggún Tractor – a 19 HP single row tractor that is simple, rugged, and has unmatched row visibility with a belly implement attachment. This is the ideal tractor for the small farm, garden, and research plot. The Oggún Tractor gives small farmers the means to be more productive and prosperous while staying true to their holistic growing methods.

Alabama Beginning Farmer Project

*Monte Baugh and Ayanava Majumdar (Auburn University)*

The Alabama Beginning Farmer Project at Auburn University/Alabama Extension was initiated in 2015 to develop and strengthen technical assistance and training for beginning fruit and vegetable producers. The project has developed a new website as a gateway to access technical information, promotional materials, and the electronic curriculum.

Contact information for Technical Assistance Providers for on-farm services is available at the comprehensive website: www.aces.edu/beginningfarms.

ARKANSAS

MarketMaker as a Tool for Local Foods Resource Mapping

*Ron Rainey (University of Arkansas); Darlene and Richard Knipe (MarketMaker)*

The goal for this project is to improve local leaders and food entrepreneurs understanding of the structure of their local/regional food systems with a focus on transparently highlighting the market participants, infrastructure and market channels. This project is a multi-state collaboration that includes MarketMaker, USDA, and a Local Foods Resource Mapping (LFRM) team being led by Stephan Goetz, Director of the Northeastern Rural Development Center. Interactive maps will be developed by MarketMaker and used as resource by state team leaders in phase one. Phase one states include Alaska, Arizona, Arkansas, Kentucky, Mississippi and North Carolina. This project is part of larger USDA-AMS effort to build capacity for local food systems develop through outreach, engagement and electronic mapping tools.

MarketMaker staff will be in the display to discuss the project and take input on the following themes:

- Integrating USDA-AMS local foods business data into the mapping resource;
- Design and develop interactive customized Food Shed Maps for the selected states;
- Useful secondary data sources and advise on technology resources that can make the data more insightful and intuitive to non-technical decisions makers;
- Work closely with USDA/AMS to develop a national interactive mapping resource to be accessed through the AMS website that blends AMS local food directory data with MarketMaker search and mapping functionality.

EXHIBIT CANCELLED
MarketMaker is a web-based resource developed and operated by its network of state partners working across twenty-one (21) states to connect food supply chain participants. http://foodmarketmaker.com/

Extension Risk Management Education
Ron Rainey (University of Arkansas)
Extension Risk Management Education (ERME) is a national program, delivered through four regional centers that provide grant funding and leadership within their respective regions. “Educating America’s farmers and ranchers to manage the unique risks of producing food for the world’s table” is the mission of the ERME Program.

Through the regional Centers that are funded by USDA/NIFA, the ERME program provides funding to successful applicants who demonstrate producer demand and intended impacts which will ultimately benefit producers in managing the many uncertainties associated with maintaining a safe and profitable business. Projects are producer-focused, results-based and encourage public-private partnerships. Funded projects must identify targeted results that will help producers manage risk and then describe how the project will measure those results. Through project outreach and technical assistance, ERME empowers producers to manage risk on their farms and ranches.

Extension Risk Management Education (http://extensionrme.org) has funded innovative programs that have generated tangible results for producers in almost every state and territories–Puerto Rico, the U.S Virgin Islands, and American Samoa.

University of Arkansas at Pine Bluff (UAPB)
Henry English (University of Arkansas at Pine Bluff)
To assist small, socially disadvantaged, and limited resource producer in Arkansas, UAPB operates a Small Farm Program, a Horticulture Program, and a Livestock Program. The programs provides the following assistance to producers: crop production, livestock production, financial planning, completing loan applications, land improvements using conservation programs, and risk management using USDA Programs. A special emphasis is placed on helping producers grow or add and market alternative crops like vegetables to their operations and a quarterly newsletter is used to help keep producers updated. To help sweet potatoes producers, the UAPB Agricultural Department operates a sweet potato foundation seed program to provide virus tested G1 seed potatoes to producers.

CALIFORNIA
Farmer Veteran Coalition
Daniel Vickers (Farmer Veteran Coalition, CA)
The Mission of Farmer Veteran Coalition is Mobilizing Veterans to Feed America. We cultivate a new generation of farmers and food leaders, and develop viable employment and meaningful careers through the collaboration of the farming and military communities.

We believe that veterans possess the unique skills and character needed to strengthen rural communities and create sustainable food systems. We believe that agriculture offers purpose, opportunity, and physical and psychological benefits.

DISTRICT OF COLUMBIA
FSA Bridges to Opportunity
J. Latrice Hill (USDA-Farm Service Agency)

Bridges to Opportunity (Bridges) is a service provided by U.S. Department of Agriculture’s (USDA) Farm Service Agency (FSA) that bridges the gap between agricultural producers and non-USDA partner organizations. The service will launch in select FSA county offices in April 2016. Through the Bridges software application, FSA is able to provide additional services to farmers and ranchers that will benefit and grow their operation and ultimately help them meet their goals.

FSA proposes to have an exhibit at the 2016 Small Farm Conference to provide more information about Bridges, which will soon be available in 20 states.

USDA has partnered with numerous local, state, regional and national agricultural organizations that offer programs, nongovernmental grants, technical assistance, financial advice and other information helpful to today’s producers. Instead of farmers and ranchers researching for hours to find services offered by these organizations, a visit to their county office to meet with an FSA representative can help answer many of these questions.

The benefits of Bridges include: (1) Providing a centralized location for producers to receive information. (2) Reducing time consuming searches; and (3) Providing farmers and ranchers with information and informs partner organizations of the producer’s interest.

Cooperative extension plays a huge role in each Bridges County, as key and crucial partners to assist the agricultural community.

Best Apps for Task Automation
Mitchell Evans (Nibaal.com)
Automation software creates engaging marketing channels and it gives the power to quickly launch campaigns. Ease and speed combined with enterprise level power makes automation software solutions highly dependable. Best apps intended for task automation helps people to generate more revenue and they generate more demand by search marketing, landing pages, social marketing, and website visitor tracking. They build relationship using methods such as email marketing, lead nurturing and Ad Bridge. For driving sales, automation software uses methods of lead scoring, sales intelligence and CRM integration. Proposal Automation Software cuts the time spent on completing business processes. It is being used by businesses to reduce the costs associated with completing particular processes. Labor intensive activities can be greatly reduced using automation software packages and how automation software transforms business is a curious topic of study. Effective automation software integrates disparate systems to enable end to end business process.
Giant IT Corporations use automation solutions made by small scale companies to automate their entire IT and business process services. Automation packages and their impact on onshore and offshore activities are described extensively in tech journals. As IT departments spend 30 percent of their time in doing basic tasks, automation software is very important. IT workers use multiple automation technologies and automation software is a very important component of their working. Marketing automation software is often perceived as a magic solution to all marketing problems. It will allow marketing professional to better communicate with buyers and stimulate interest in their products. Marketing/sales automation software is an out of the box software solution.

To develop clear, concise and creative proposals instantly, log on to http://www.nibaal.com/

Get the advantage of creating Proposals on Microsoft Word with Nibaal Word Plug-In.

Tackling the Issue of Wasted Food: History and Mission of the U.S. Food Challenge Program

Shirley E. Brown (USDA-Economic Research Service)

The United States Department of Agriculture (USDA) and the Environmental Protection Agency (EPA) came together in 2013 to launch the Food Waste Challenge Program. This initiative is a direct response to statistics showing that on the one hand, 17.5 million U.S. households do not have access to adequate nutrition while on the other, 31% of food goes uneaten at the retail and consumer level and that food is the largest component of waste going into municipal landfills.

The program works with farms, processors, manufacturers, supermarkets, restaurants, schools, and local government to identify creative strategies for limiting food waste while helping communities to feed the hungry. Among USDA agencies actively involved in this project are the Agricultural Marketing Service, the Agricultural Research Service, the Economic Research Service, the Food and Nutrition Service, the Food Safety and Inspection Service, and the National Institute of Food and Agriculture. This exhibit will provide an overview of activities, successes, and future direction of the effort to reduce food waste and associated environmental impacts.

The USDA Agricultural Marketing Service

Kim Duncan, Michael Durando, Betsy Rakola and Basil Coale (USDA-AMS)

USDA’s Agricultural Marketing Service (AMS) strives to reach out to small, mid-size, and underserved farmers and ranchers. The Agency has a number of programs and services available that are designed to help farmers succeed. Some of the most popular programs include: organic certification; marketing opportunities grants; USDA Market News price reports; farmers market advice, assessment, and design services; and direct marketing research and advice.

Other services include research on food hubs and distribution infrastructure, Perishable Agricultural Commodities Act (PACA) protection for produce sellers, and information on how to sell products to be used by Federal food nutrition assistance programs.

For more information on USDA’s Agricultural Marketing Service, visit our Web site at www.ams.usda.gov, or call us direct at (202) 260-8605.

USDA-National Institute of Food and Agriculture

Larina Mullings and Lelan Dixon (USDA-NIFA)

The U.S. Department of Agriculture’s (USDA) National Institute of Food and Agriculture (NIFA) was established by the Food Conservation and Energy Act of 2008 (the 2008 Farm Bill) to find innovative solutions to issues related to agriculture, food, the environment, and communities. We integrate research, education, and extension to ensure that groundbreaking discoveries go beyond the laboratory, to the classroom, reaching the people who can put knowledge into practice.

Our goals include advancement and application of science and technological tools in order to:

- Achieve global food security and fight hunger
- Mitigate climate change impacts on agricultural, forest, and rangeland systems
- Improve and increase the production of goods and services from working lands while protecting the nation’s natural resource base and environment
- Contribute to the nation’s energy independence through sustainable production of bioenergy and bio-based industrial products
- Combat childhood obesity by ensuring the availability of affordable, nutritious, and safe food and providing individuals and families science-based nutritional guidance
- Ensure the development of human capital, communities, and a diverse workforce

Land Grant Colleges and Universities

Denis Ebodaghe (USDA-NIFA)

The concept of publicly funded agricultural and technical educational institutions first rose to national attention through the efforts of Jonathan Baldwin Turner in the late 1840s. The first land-grant bill was introduced in Congress by Representative Justin Smith Morrill of Vermont in 1857. The bill passed in 1859, but was vetoed by President James Buchanan. Morrill resubmitted his bill in 1861, and it was ultimately enacted into law in 1862. Upon passage of the federal land-grant law in 1862, Iowa was the first state legislature to accept the provisions of the Morrill Act, on September 11, 1862. Iowa subsequently designated the State Agricultural College (now Iowa State University) as the land grant college on March 29, 1864. The first land-grant institution actually created under the Act was Kansas State University, which was established on February 16, 1863, and opened on September 2, 1863. The oldest school to hold land-grant status is Rutgers University, founded in 1766 and designated the land-grant college of New Jersey in 1864. A second Morrill Act was passed in 1890, aimed at the former Confederate states. This act required each state to show that race was
not an admissions criterion, or else to designate a separate land-grant institution for persons of color. Among the seventy colleges and universities which eventually evolved from the Morrill Acts are several of today’s historically black colleges and universities. Though the 1890 Act granted cash instead of land, it granted colleges under that act the same legal standing as the 1862 Act colleges; hence the term “land-grant college” properly applies to both groups. Later on, other colleges such as the University of the District of Columbia and the “1994 land-grant colleges” for Native Americans were also awarded cash by Congress in lieu of land to achieve “land-grant” status. In imitation of the land-grant colleges’ focus on agricultural and mechanical research, Congress later established programs of sea grant colleges (aquatic research, in 1966), urban grant colleges (urban research, in 1985), space grant colleges (space research, in 1988), and sun grant colleges (sustainable energy research, in 2003). West Virginia State University is the only current land-grant university to have surrendered its land-grant status, which happened in 1957, and to later regain this status, which happened in 2001; and is also the smallest land-grant university in the country.

Diverse Communities Serving Critical Needs of Small Farmers

Lorette Picciano (Rural Coalition, Washington, DC)

Historically underserved producers are a growing sector of the US Agriculture system. Their production base is largely concentrated in specialty crop, livestock and mixed production on relatively small sized operations. This exhibition will focus on the tangible success of Rural Coalition and its diverse member organizations in reaching farmers, building communities, sharing knowledge, securing policy change and advancing equity benefiting all small farmers in our nearly four decades of work.

Our exhibition will feature maps, data and stories of how the coordinated the efforts community based organizations have successfully led outreach and translated good ideas into effective policy tools and structural transformation in delivery systems. We will also look at how our communities employ traditional ecological knowledge and knowledge interchange in addressing economic, environmental and climate challenges and in advancing resilience of this nation’s diverse Rural Communities.

The USDA-Economic Research Service

Nancy McNiff, Marilynn Graham and Doris Newton (USDA-ERS)

The Economic Research Service (ERS) is a primary source of economic information and research in the U.S. Department of Agriculture. The ERS mission is to inform and enhance public and private decision making on economic and policy issues related to agriculture, food, the environment, and rural development. ERS exhibit materials include copies of research reports and articles on topics such as U.S. farm structure and organization in America’s Diverse Family Farms, 2015 Edition; the recently released U.S. Farmland Ownership, Tenure, and Transfer report and Charts of Note on a variety of topics; summaries and general information.

USDA Rural Business – Cooperative Service

John Beeler and Michelle Wert (USDA-RBS)

USDA Rural Business – Cooperative Service’s (RBS) exhibit booth will contain information on grant and loan programs that assist farmers, ranchers, and rural small businesses. Among the programs RBS offers are the Rural Energy for America Program and the Value Added Producer Grant. The Rural Energy for America Program (REAP) provides grant and guaranteed loan funding to agricultural producers and rural small businesses to purchase or install renewable energy systems or make energy efficiency improvements. The Value Added Producer Grant (VAPG) helps agricultural producers enter into value-added activities related to the processing and/or marketing of bio-based, value-added products.

Grain Inspection, Packers and Stockyards Administration (GIPSA)

Peter Jackson (GIPSA)

The Grain Inspection, Packers and Stockyards Administration (GIPSA) plays an integral role in ensuring the economic viability of America’s farmers and ranchers, and, in turn, of rural America. GIPSA’s programs directly and significantly impact three key sectors of American agriculture – the livestock, poultry, and grain markets. Our work ensures fair-trade practices and financial integrity for competitive markets, and promotes equitable and efficient marketing across the nation and around the world.

Our two programs are the Packers and Stockyards Program (P&SP) and the Federal Grain Inspection Service (FGIS). P&SP protects fair trade practices, financial integrity, and competitive markets for livestock, meat, and poultry. FGIS facilitates the marketing of U.S. grains, oilseeds, and related agricultural products by providing the market with terms and methods for quality assessments, maintaining the integrity of the grain marketing system, and providing for the national grain inspection and weighing system.

GIPSA comprises nearly 800 full-time, part-time, and intermittent employees. P&SP includes a headquarters unit in Washington, D.C.; three front-line regional offices in Atlanta, Georgia; Denver, Colorado; and Des Moines, Iowa; and a cadre of resident agents that are our eyes, ears, and compliance and regulatory presence on the ground. The grain inspection program has a headquarters unit in Washington, DC; the National Grain Center in Kansas City, Missouri; and 7 field offices and 1 Federal/State office across the country. These field offices are located in Cedar Rapids, Iowa; Grand Forks, North Dakota; League City, Texas; New Orleans, Louisiana; Portland, Oregon; Stuttgart, Arkansas; and Toledo, Ohio; and the Federal/State office is located in Olympia, Washington. FGIS delivers official inspection and weighing services via the national inspection system, a unique public-private partnership comprised of Federal, State, and private inspection personnel. Our partners include 56 State and private agencies authorized by GIPSA to provide official inspection and weighing services on our behalf.
Hmong: The Changing Face for USA Farming and Ranching

Chukou Thao (National Hmong American Farmers, Inc.)

NHAF display table will include the following
1. NHAF brochures and hands on the NHAF and the Hmong farmers in the USA.
2. Projects (past/present/future).
3. Location map where Hmong farmers resident, work and live.
5. Hmong grown fruits and vegetables (for display and for taste test).
6. Other areas of farming where Hmong community members are entering e.g. poultry/livestock/forestry/etc.

USDA-Forest Service

Cheryl Bailey and Altonia Matthews (USDA-FS)

The Cooperative Forestry Staff, of the U.S. Department of Agriculture’s Forest Service, works with States, private landowners, and other partners to promote healthy forests and livable communities throughout the United States. Our programs and partnerships help private landowners and rural communities care for their forests, strengthen local economies, and maintain a high quality of life.

There are nearly 500 million acres of non-Federal forest land in the United States, comprising about 20 percent of the Nation, and two-thirds of the Nation’s forests. Over 50 percent of the Nation’s forests are privately owned. Management practices on these lands impact the social, economic, and natural environment for everyone.

In partnership with State forestry agencies, Cooperative Forestry currently manages a number of programs.

Federal Programs and Resources for Small, Beginning, and Local Food Producers

Juli Obudzinski, Paul Wolfe and Wes King (National Sustainable Agriculture Coalition)

The National Sustainable Agriculture Coalition (NSAC) is an alliance of grassroots organizations that has served as a key resource for the sustainable agriculture community to connect farmers with federal programs and resources that support small, diversified, beginning, socially disadvantaged, and local food producers.

We are proposing a table exhibit to highlight specific resources and programs that support small farmers in particular – focusing on risk management options for small and organic producers, resources for local and regional food producers, and tools to help beginning and socially disadvantaged farmers succeed.

Local Food: NSAC successfully led the way in championing the inclusion and implementation of a number of key programs and policies that are helping to expand opportunities for small farms through local and regional food sales and value-added enterprises - including the Farmers Market and Local Food Promotion Program and the Value-added Producer Grant Program. NSAC policy staff will provide insights into that work as well as program resources and analysis.

Risk Management: NSAC will share resources and insights from our work and evaluation of crop insurance access issues for small, organic, and diversified farms. We will present information on how the program does and does not work for these farmers.

Beginning and Socially Disadvantaged Farmers: NSAC has long-championed increased support and federal resources to help the next generation of small and socially disadvantaged farmers get started in agriculture - including key loan, conservation, and training programs. NSAC will provide information and analysis of these resources, and what more is needed.

FLORIDA

Capacity Building for Sustainable Development

Jennifer E. Taylor (Florida A&M University- StateWide Small Farm Program)

The critical role that small farmers hold in their local and global communities as sustainable food providers is pivotal to local sustainable food security.

Though small farmers make up to 90% of the world’s farmers, often they have not had equal access and participation in programs and training designed to assist large producers and agribusinesses. Generally, agricultural research and extension have sought out medium and large farmers thought more successful, innovative, and readily able to adopt technology and contribute to growth and development.

A recent USDA Census indicated that about 91% of all farms in the United States are small farms. Small farms represent nearly 90% of all farms in Florida, this includes resource poor farmers.

FAMU StateWide Small Farm Programs was designed to assist and equip underserved farming populations and their communities. Participatory capacity building sessions provided relevant education, hands-on training, and technical assistance - enabling farms to thrive; encouraging viability and sustainability, well-being, and quality of life.

GEORGIA

Cooperative Extension Program at Fort Valley State University

Thomas Marc (Fort Valley State University)

The Cooperative Extension Program at Fort Valley State University provides practical, solution-oriented learning opportunities for those persons who do not or cannot participate in formal classroom instruction offered on the campus.

Working jointly with the Cooperative Extension Service, University of Georgia, and the United States Department of Agriculture, the program specifically seeks to identify and develop educational programs for a diverse clientele which includes the rural...
disadvantaged, working homemakers, small/family and part-time farmers, lay community leaders, youth, small businesspersons and other members of the general public in Georgia.

The Sustainable Agriculture Research & Education (SARE) Program

Candace Pollock-Moore (Southern SARE)

The Sustainable Agriculture Research & Education (SARE) program is a USDA-funded grants organization providing funding opportunities to farmers/ranchers, researchers, Extension specialists, community groups and other Ag professionals to further sustainable Ag production and marketing practices. In the Southern region, the SARE program covers 13 states and two U.S. territories. We provide a number of grant opportunities for sustainable Ag research projects. In addition, we provide educational resources based on the results of the grants we fund. The SSARE program is a collaboration between the University of Georgia, Fort Valley State University and the Kerr Center for Sustainable Agriculture. We are particularly proud of our efforts with youth, limited resource and minority farmers, and NGOs in the South. The advancement of sustainable agriculture requires the hard work and dedication of countless people and institutions, and the SARE program has been providing that support for nearly three decades. We have funded over 1,000 projects totaling more than $56 million.

IDAHO

University of Idaho Extension Small Farms Programs

Ariel Agenbroad (University of Idaho)

University of Idaho Extension provides reliable, research based education and information to help people, businesses and communities solve problems, develop skills and build a better future. Through our statewide network of faculty and staff in 42 counties and 12 research and Extension centers, we work to transform knowledge into solutions that work.

We focus on contemporary topics that matter to the people of Idaho, including:

- Small and large scale sustainable agriculture
- Home horticulture
- Natural resources
- Health and nutrition
- Food safety
- Personal financial management
- Youth development
- Community development

Members of the Small Acreages and Community Food Systems Topic Team engage with Extension and University colleagues, agencies, organizations, landowners and producers to conduct applied research and deliver education that addresses issues related to land stewardship, scale-appropriate livestock and crop production, marketing, and local food systems.

Ultimate goals of the Small Acreages and Community Food Systems program are 1) to support the start-up, development and success of small-scale agricultural businesses, 2) empower landowners and on small acreages to protect and preserve their natural resources; and 3) contribute to the strength and resiliency of local food systems in Idaho’s communities.

- Encourage the production and consumption of sustainably produced local foods.
- Develop relationships, strengthen networks and increase collaboration between producers, consumers, food and agricultural organizations/agencies and policy makers.

Rural Roots: Healthy Farms, Healthy Food, Healthy Communities

Colette DePhelps (Rural Roots)

Established in 1997, Rural Roots is a regional, 501(c)3 nonprofit food and farming organization. As a community of small-acreage and family farmers, ranchers, market gardeners, chefs, educators, consumers, and others, we build on the opportunities and tackle the challenges facing small-acreage and family farmers, ranchers, and market gardeners and create connections between sustainable producers, consumers, and other regional food and agricultural organizations.

The goals of Rural Roots are to:

- Enhance the economic viability of sustainable and organic farms, ranches and communities throughout Idaho and the Inland Northwest.

INDIANA

National AgrAbility Program

Cindy Chastain, Veteran Outreach Coordinator, National AgrAbility Project

The vision of AgrAbility is to enable a lifestyle of high quality for farmers, ranchers, and other agricultural workers with disabilities, so that they, their families, and their communities continue to succeed in rural America. For this target audience, “success” may be defined by many parameters, including: gainful employment in production agriculture or a related occupation; access to appropriate assistive technology needed for work and daily living activities; evidence-based information related to the treatment and rehabilitation of disabling conditions; and targeted support for family caregivers of AgrAbility customers.
Kentucky State University: A World of Exploration at Your Fingertips

Cynthia Rice, Buddhi Gyawali and Bijesh Mishra (Kentucky State University)

Research programs and opportunities range from aquaculture, apiculture, to geospatial aspects using remote sensing and geographic information systems (GIS). There is a 300 acre Research and Demonstration Farm as well as a 300 acre Environmental Education Center. Organic land production as well as the opportunity for goat, beef, poultry, and fruit and vegetable trials exist at Kentucky State University. There are multiple research opportunities under each of the following programs: Fish and Aquaculture Genetics, Fish Disease Diagnostic Laboratory, Aquaculture Production, Water and Soil Science, Forest Management, Molecular Genetics & Genomics, Sustainable Insect Pest Management, Fruit Horticulture and Plant Molecular Genetics, Ornamental and Medicinal Plant Program, Organic Farming Research, Soil Science/Biometry, Environmental Education, Environmental Science and Water Quality, Geographic Information Systems & Remote Sensing Application to name a few and other opportunities as well. Current grants include Small Scale Farm Program Grants, Small and Socially Disadvantaged Producers Grant, Environmental Science Capacity-building Grant, Developing Minor in GeoSpatial Applications and Promoting STEM Education. There is also a Surface Mining/Appalachian Quality of Life Project Team studying ways to network with and help Appalachian communities.

University of Maryland Eastern Shore Small Farm Outreach Initiative

Berran Rogers, (University of Maryland Extension-UMES)

The Program: The primary purpose of the Small Farm Outreach Initiative is to deliver educational programs, training, and outreach that help limited-resource and socially disadvantaged farmers own and operate farms successfully, and assure equitable participation in USDA programs. Participation in the program is voluntary and open to all farmers and landowners who are interested in receiving outreach and technical assistance.

Program Objectives: The overall objective is to create awareness and increase participation among socially disadvantaged farmers and ranchers in available USDA programs and other farm programs and incentives offered by the state. Specifically, we work to:

- Assist socially disadvantaged and limited resource producers with identifying and taking advantage of direct marketing strategies/tools that will help them establish new markets and increase farm sales.
- Educate and train new and traditional farmers in identifying and integrating profitable alternative enterprises through innovative and cost-efficient production practices.
- Increase participation among socially disadvantaged farmers and ranchers in available USDA programs and other farm programs and incentives offered by the state.
- Assist socially disadvantaged and limited resource producers with identifying and taking advantage of direct marketing strategies/tools that will help them establish new markets and increase farm sales.
- Educate and train new and traditional farmers in identifying and integrating profitable alternative enterprises through innovative and cost-efficient production practices.

Educational Programs and Activities: The Small Farm Outreach Initiative provides a number of outreach and educational services that address a variety of issues and needs as identified among target audiences that include but are not limited to: alternative enterprise selection, direct marketing, improved and inexpensive agriculture production practices, farm business management, conservation awareness, and participation in USDA farm programs.

Outreach and trainings are delivered in group settings (informational meetings, workshops, farm field demonstrations, conferences), as well as, individual settings (office and farm visits).

Heron Systems Supporting Agriculture and Forestry

Brett Darcey and Kenneth Kroeger (Heron Systems)

Heron Systems is a small technology company headquartered in Maryland with offices in Virginia and North Carolina. Our focus is on automation solutions for both the defense and commercial sectors. In 2016 we will launch Hawkeye, our signature UAV product suite. At the National Small Farm Conference, Heron Systems will exhibit the Hawkeye UAV, Hawkeye Mobility and offer attendees information on the research and findings from our years of field work in support of the VA Department of Conservation of Recreation and small VA farmers. The goal of the exhibit will be to provide attendees with awareness of how the combination of UAVs and mobile technology can bring many of the benefits offered by precision agriculture into the price range of small farmers.

Hawkeye merges the capabilities of UAVs with the power and mobility of smart phones/tablets, offering farmers, agronomists, extension agents and researchers a simple, powerful precision agriculture platform. With Hawkeye, many of the benefits offered by expensive precision agriculture solutions can be achieved at a much lower price point. By leveraging aerial imagery and adding a few essential capabilities, we can empower farmers to make optimized, efficient decisions that both reduce their input costs and increase yields.

Key benefits to farmers:

- We ‘fly as a service’ to dramatically reduce the upfront investment by small farmers.
- We merge NDVI, soil samples, yield history and local knowledge to generate high resolution (30’x30’) compared to 1-2 acres by leading Feed and Seed companies) Management Zones available on desktop and mobile devices.
- Follow up flights mean these zones live and evolve as the fields change, ensuring that input application is always tailored to the field’s condition.
- Mobile app supports crop scouting, soil sampling, note taking, and task management; all geo-located and easily accessed by the entire team. Easily scale to support seasonal work load.
- ‘Quick Precision’ tool allows any farmer with VRT to easily apply precision prescriptions using the mobile device as the GPS.
**EXHIBITS**

- Desktop app keeps the entire history of the fields in a single location. Quickly review historical performance, annotate current maps, mark areas for scouting follow up, or generate an input prescription.
- Algorithm recipe book allows farmers to rapidly obtain valuable information from the available survey data.

**MINNESOTA**

FarmAnswers.org,

*Kevin Klair (University of Minnesota)*

FarmAnswers.org, the official USDA-NIFA beginning farmer and rancher clearinghouse, has tools to help you assist new farmers in getting started farming, such as on business planning or financing a farm, as well as tools that will help beginning succeed once you’re more seasoned. The site is divided into several different sections to help you better find the specific answers to your questions.

**MISSISSIPPI**

Small Farm Outreach Training and Technical Assistance Project (SFOP)

*Carolyn L. Banks (Alcorn State University Extension Program)*

The Small Farm Outreach Training and Technical Assistance Project (SFOP) works closely with all United States Department of Agriculture (USDA) agencies, federal and state agencies, and a variety of community-based organizations to ensure small-and-limited-resource families receive the training and technical assistance needed to improve their present operations and increase profitability. This mission is in line with our goals to: 1) Develop educational programs that assist small farmers in adapting to new innovations while remaining current in their present operations. 2) Identify production problems faced by small farmers. 3) Prepare farmers to take advantage of opportunities for enhancing their profitability by establishing alternative enterprises and off-farm employment. 4) Assist small farmers in achieving profitability in their current operations and in pursuing new alternative agricultural enterprises.

The Small Outreach Training and Technical Assistance Project is committed to serving socially disadvantaged and small family farmers by helping to improve their socioeconomic status within the state of Mississippi. For additional information please contact us at 877-427-9536 or visit our page (www.alcorn/AREAS.edu) at the Alcorn State University website.

**MISSOURI**

The FINCA model in Missouri: Families Integrating Nature, Communities and Agriculture

*Nadia Navarrete-Tindall, Sue Bartelette and Mary Glasper (Lincoln University of Missouri)*

A finca refers to a small farm in El Salvador and other Latin American countries where native plants, fruits, flowers and vegetables, are produced for family consumption and income. Fincas and other kinds of small farms are also found in other developing countries and are becoming more common in the United States. The main goal of the FINCA model is to replicate this small farm diversification concept and transform small disturbed and non-productive land in rural and urban areas into useful land in Missouri while families can learn to produce food and restore their lands by using sustainable methods.

Two demonstration FINCAs, one in Jefferson City at the LU campus and one on private land in the Southeast region in the Bootheel have been established. Experimental plots have also been established at Lincoln University George Washington Carver Farm and Busby Farm in Jefferson City. More than 20 Missouri edible native plants, including woody species like wild plum, elderberry, chokeberry, prairie jersey tea, smooth and winged sumac, and herbaceous plants like golden glow, cup plant, nettles, wild leeks and glade onion are being evaluated to demonstrate their potential as alternative crops for food and other value-added products.

Native plants will not only provide food but other uses such as dyes, fiber, herbal, cut flowers, and/or craft materials. Preliminary data of growth and production of native plants evaluated will be presented. This is extension project funded by the National Institute of Food and Agriculture (NIFA).

**NEW YORK**

The National Young Farmers Coalition: For Young Farmers, By Young Farmers

*Holly Rippon-Butler (National Young Farmers Coalition)*

NYFC represents, mobilizes, and engages young farmers to ensure their success. We envision a country where young people who are willing to work, get trained and take a little risk can support themselves and their families in farming.

As a coalition founded and led by farmers, we are working to change policies, help develop farmer leaders and networks, and provide business services to our members. Our current policy priority is adding farmers to the Public Service Loan Forgiveness Program. We have 30 farmer-led chapters around the country that are providing support and camaraderie to each other, advocating for change in their local communities, and informing our national policy advocacy work. NYFC conducts specific program work on land access as well as Western water and sustainability.

Our exhibit will focus on informing farmers, policy makers, advocates and other service providers about our work, as well as how they can engage in helping the next generation of farmers establish viable careers.
NORTH CAROLINA

Your Business is the Future of Agriculture. Protect it with Crop Insurance.

Debra Bouziden and Mary Staak (USDA-Rural Management Agency)

Crop insurance is changing and expanding to include more program options and increased areas of coverage. New incentives for beginning farmers and ranchers are now available. Programs that will be showcased at the USDA/RMA booth will be Beginning Farmer and Rancher, Whole Farm Revenue Protection, and Organic Price Elections. Producers will receive information on what to expect from a crop insurance agent and basic information explaining what crop insurance is and how to assess your farming risk.

Debra Bouziden, USDA/RMA Outreach Coordinator and Raleigh, North Carolina Regional Office staff will be available at the booth to answer questions and provide current information on these crop insurance products.

Fit to Farm

Jessica Wilburn and Robin Tutor Marcom (NC Agromedicine Institute); Casey Stevens (NC Cooperative Extension Service, Greene County Center)

Farmers have traditionally been thought to be one of the healthiest occupational groups. However, NC Agromedicine Institute data indicates that this may not be the case. In a sample of 1165 farmers, 38% were found to be hypertensive with another 33% being pre-hypertensive. Of particular concern is that hypertension rates among 18-34 year olds was more than double that for eastern North Carolina. Similarly, hypertension in 35-54 years old farmers was more prevalent than that of others of the same age group in the region.

To address this concern, the Institute developed Fit to Farm, an educational program that encourages farmers to put their health first by educating them on the importance of a healthy lifestyle. Through a series of four 15-minute modules, farmers learn about the importance of managing sugar, fat and sodium intake, portion size and activity levels. They also learn about simple changes they can make within the context of their daily routines to improve their overall health and wellness. Modules are designed to be easily delivered at an agricultural production meeting, on-farm health screening visit or other farm-related event.

In conjunction with the training, an AgriSafe-NC healthcare professional conducts blood pressure and blood sugar screenings. Individuals with abnormal screening results are referred back to healthcare provider for follow-up. If they do not have a provider, assistance is provided in locating one.

This exhibit will showcase the Fit-to-Farm program, its new train-the-trainer model and the impact it is having on the health of NC farmers.

First on Scene

LaMar Grafft (North Carolina Agromedicine Institute)

In agriculture, the first person to come across an accident is usually the farmer, a farm family member, employee, friend, or neighbor of the victim. Most individuals on the farm are aware of potential hazards, but they may not always know what actions to take if they arrive first at an accident scene. The problems farm accident victims encounter may be compounded by this lack of knowledge along with other mitigating circumstances such as:

- Remote, isolated work areas;
- Time lapse between an injury and discovery;
- Delayed response for EMS/fire personnel;
- EMS/fire personnel who are unfamiliar with farm equipment and/or structures.

More often than not, the shock of the situation hinders an untrained person’s thinking and decision-making ability. Because of these problems, a basic understanding of rescue procedures and first aid methods is extremely important.

First On Scene teaches participants how to make important decisions at the accident scene. The key to survival is to not become a second victim. This program leads participants through scenarios that focuses them to think about typical injury incidents and the appropriate response. The individual who is first on scene is a critical link in the chain of survival. The ability to make quick decisions and take proper action could be the difference between the victim recovering completely from an accident, and having a permanent disability or worse.

This exhibit will showcase First on Scene and how it is helping farmers and first responders be better prepared to respond to farm accidents.

Building a Sustainable Farm Operation for Small-Scale and Socially Disadvantaged Farmers in North Carolina

Jim Ibrahim (North Carolina A&T University)

The long term goal of this program is to build sustainable farm operations for small scale and socially disadvantaged farmers and ranchers through the foundational mechanisms of: community based education, technical assistance, and marketing connections in North Carolina. As a result of achieving this goal, this program will provide enhanced profitability, expanded market opportunities, and improved quality of life for North Carolina farmers and their communities.

This program is also developed to provide educational information and training to North Carolina prospective and beginning farmers to become the nation's next generation of food, fiber and fodder producers. North Carolina is one of the leading and very diverse in production agriculture in the nation. In 2012, the average age of principal farm operators in U.S. was 58.3 years, up 1.2 years since 2007, and continuing a 30-year trend of steady increase. The older age groups all increased in number between 2007 and 2012. As for
North Carolina average age of farmers is 58.9 years (United States Department of Agriculture). North Carolina is state rich in agricultural traditions and resources, yet the majority of North Carolina’s food dollars are spent on products that are imported from other parts of the country, or from other countries. North Carolina needs new generation farmers with potential of meeting many of the state’s food needs, but require support in order to do so.

Another important aspect of the program is outreach. Through outreach efforts, farmers are provided information and technical assistance to ensure that they have access to all services available through USDA programs. North Carolina A&T State University collaborates with USDA agencies to achieve this goal. Predominantly minority community organizations, including religious organizations and key community leaders, are also utilized to reach the small scale and socially disadvantaged farmers.

**Reinventing the Wheel: A New Paradigm of Technical Services**

*Karen RM McSwain (Carolina Farm Stewardship Association)*

Carolina Farm Stewardship Association has developed a new paradigm for providing farmers the technical information they need to be successful. Through our Farm Services and Food Systems teams, and incubator farm, we offer multi-faceted technical services to meet the diverse needs of small farmers.

Our unique approach includes workshops, online resources, one-on-one consulting services, research, and access to land and equipment for individuals interested in starting their own farm at the Elma C. Lomax Farm, the only certified organic incubator farm in the Southeast. Since 2011, through our Organic Transition Initiative and Local Produce Safety Initiative we have provided training to over 1,500 workshop participants, one-on-one consulting to 160 farmers, and allocated $30,475 in cost share funding, which has led to a 57% increase in the number of certified organic farms and a 168% increase in GAP certified farms in the Carolinas.

Our new Seasonal High Tunnel Initiative will provide technical information to farmers struggling to overcome the obstacles of producing in seasonal high tunnels by offering workshops, one-on-one consulting, online resource guides, and high tunnel research results. Our Food Systems work has helped launch Eastern Carolina Organics, an independent, farmer-owned LLC that markets Carolina organic produce, Carolina Ground, North Carolina’s first LC3 that works with farmers and bakers to supply high-quality, stone-ground, Carolina grown organic bread flour and the Cobblestone Farmers Markets, a sustainable growers-only farmers market. As an exhibitor, we will discuss our successes and the partnerships that have enabled us to meet our goals with conference participants.

**Revisions to the EPA Worker Protection Standard (WPS)**

*Robin Tutor Marcom (North Carolina Agromedicine Institute)*

Effective January 2, 2016, revisions to the US Environmental Protection’s Worker Protection Standard (WPS) will go into effect. WPS is primarily intended to reduce the risks of illness or injury to workers and handlers resulting from occupational exposures to pesticides used in the production of agricultural plants on agricultural establishments. It requires agricultural employers and commercial pesticide handler employers to provide specific information and protections to workers, handlers and other persons when pesticides are used on agricultural establishments in the production of agricultural plants. It also requires handlers to wear the labeling-specified clothing and personal protective equipment when performing handler activities, and to take measures to protect workers and other persons during pesticide applications.

While WPS allows for exemptions for farm owners and immediate family with regard to some aspects of the rule, owners and immediate family must still comply when respirators are required on the pesticide labeling and follow WPS requirements for training, medical evaluation, fit testing, and recordkeeping. If any type of respirator is required by the pesticide labeling for applicators, other than a particulate filtering respirator, the handler must wear the respirator inside the enclosed cab during handling activities. All pesticides labelled for use of eye protection will require that eye flush provisions be made at the mixing and loading site as well as in the application area.

This exhibit will provide participants with an overview of WPS revisions with special emphasis on new respiratory protection and eye safety requirements.
Land Loss Prevention Project

*Savi Horne (Land Loss Prevention Project, Durham, NC)*

The Land Loss Prevention Project (LLPP) was founded in 1982 by the North Carolina Association of Black Lawyers to curtail epidemic losses of Black-owned land in North Carolina. The organization was incorporated in the state of North Carolina in 1983. The LLPP broadened its mission in 1993 to provide legal support and assistance to all financially distressed and limited resource farmers and landowners in N.C. facing challenges that may result in the loss or diminishment of their land and livelihoods. The LLPP has two focal units – the Litigation Unit and the Sustainable Development and Environment Unit. The Litigation Unit performs debt restructuring for farmers in crisis and multi-faceted legal work designed to preserve land tenure for traditionally underserved individuals and families. Encompassed within these efforts is the work of the SmartGrowth Business Center, an internal resource, dedicated to assisting farmers through the provision of both legal representation and outreach on business law issues. The creation of SmartGrowth broadened the organization’s approach to saving the family farm through the provision of proactive legal services and education focused on risk management and business development. Provided services include direct legal assistance and education on business entity formation, contractual review, counseling concerning program availability and requirements, and the addressing of credit management.

Operation Spring Plant, Inc.

*Dorothy E. Barker (Operation Spring Plant, Inc.)*

OSP’s outreach program has focused on agricultural sustainability and the family farm.

Avenues of outreach have included workshops, seminars, and programs on alternative agricultural opportunities. Trainings have been provided in the following areas:

- Women in today’s agriculture
- The national youth in today’s agriculture
- Rural economic and cooperative development
- Risk management for small farmers
- Marketing/outlet-food safety
- Sustainable and organic practices
- Environmental Issues
- Establishment of a Stamp-Out Hunger Project
- On farm bio-diesel production
- Specialty Crops (organic sweet potatoes, organic tobacco, collards, kale, turnips, mustard, turnip greens, sweet corn, Loufa gourds, medicinal, and culinary herbs)

Operation Spring Plant, Inc. provides training to minority, limited resource, and small family in order to:

1. Mitigate the loss of family farms, a problem that has worsened over the past 10 years.
2. Compensate for the lack of role models within minority farming communities.
3. Continue to have racially diverse production agriculture in North Carolina.
4. Keep farmers informed of training opportunities locally, regionally and nationally.
5. Provide a network of farmers to form collaborations.
6. Continue to make farmers aware of environmental risks, regulations, and consequences of violations.
7. Provide an avenue through training for limited resource and small family farms to recognize and capitalize on markets they have yet to enter.
8. Prepare minority and limited resource youth to take advantage of agriculture and agribusiness opportunities now and in the future.
9. Keep minority, limited resource, and small family farmers as stewards, environmentalists, owners, and operators of small family farms in North Carolina.

OREGON

The Center for Small Farms and Community Food Systems - Oregon State University

*Christina Lucas, Lauren Gwin and Garry Stephenson (Oregon State University Center for Small Farms and Community Food Systems)*

Established within the Oregon State University College of Agricultural Sciences in September 2013, uses education, research, and collaboration to achieve our vision of successful, environmentally regenerative small farms, sustainable community food systems, and students with high “Food IQ.” The Center is based on OSU’s Corvallis campus and has at its heart the Extension Small Farms Program, which currently has field-based faculty covering 10 counties and partial program assistant support in an additional five counties.

The OSU Small Farms Program is making significant contributions to the field of organic and sustainable farming research and creating highly effective, practical tools that farmers use.

This program continues to be a national leader in new and beginning farmer education. Our latest project targets small farm profitability and long-term viability and is designed around key stages of farm and farmer development.

Oregon has a rich array of statewide and community based non-profits working across the community food system spectrum. Their leaders, members, analysis, advocacy, and grassroots organizing provide critical energy for food system change. Our partnerships with them are essential to our approach and effectiveness.
TENNESSEE
Showcasing Tennessee Farmers

Clardy, A., Bullock, R., Stribling, F., and Crudup S. (Tennessee State University Cooperative Extension)

Tennessee ranks 11th for the number of farms from the USDA 2012 census information. The Tennessee Department of Agriculture cites that in 2011, 70% of farms in Tennessee were classified as small farms operations that generated annual sales less than $10,000, according to the Tennessee Department of Agriculture. There were a total of 1,324 African-American/Black farm operators in Tennessee with total farm acreage of 107,819, which is a slight increase from 2007. American Indian/Native American in Tennessee operated 689 farms; Asian operated 164 farms; and Native Hawaiians operated 27 farms in the Tennessee region from the 2012 USDA Census data. Women farmers in 2012 were 28,813 from all the ethnic/race groups listed above. Through our Outreach Program, Small Farm Expo and New Farm Academy we are able to reach small existing farmers and producers, beginning farmers and ranchers and people who are interested in becoming farmers and producers. Our poster will showcase the benefit of our three programs for Tennessee small farmers, producers and landowners.

TEXAS
Developing New and Beginning Farmers and Ranchers Using the Model Farm Concept

Billy C. Lawton, Alfred L. Parks, Nelson T. Daniels, and Kimberly Ratcliff (Prairie View University)

The aim of this project is to recruit and enhance the sustainability of new and beginning farmers and ranchers (NBFRs) in Texas by helping them develop successful farm and ranch operations through the use of “a Model Farm Concept”. These goals will be accomplished through the following objectives:

1) Establish model farms at the university research farm and in targeted counties to serve as training sites.

2) Provide scale-appropriate instructional and experiential training in production, business management and marketing.

3) Develop effective partnerships between NBFRs and United States Department of Agriculture (USDA), State agencies, Community Based Organizations (CBOs) and other successful farmers to create mentorship opportunities and facilitate information sharing on programs and services available to them.

4) Develop a NBFR database to facilitate a 360° marketing program to outreach and disseminate information to our target audience.

This project is a joint effort between the Agricultural and Natural Resources (AGNR) unit of our Cooperative Extension Program (CEP) and two prominent CBOs working closely together. Overall the project will engage approximately 7,000 limited resource farmers in the counties that we serve in Texas. This will attract 300 new start-ups and 800 plus new and beginning farmers will benefit.

The National Immigrant Farming Initiative, Inc. (NIFI)

Amelia Soto Sanchez (The National Immigrant Farming Initiative, Inc.)

The National Immigrant Farming Initiative, Inc. (NIFI) networks resources and education, supporting success in agriculture for beginning, limited-resource, immigrant, refugee, military veteran farmers, farm workers and families, and communities.

NIFI assists in capacity building facilitating a participatory method for self-review and planning (PSRP) where the participants take ownership of their groups, which they develop with key activities and clear objectives that withstand challenges such as poor economic conditions.

Since 2002, NIFI has worked with community-based groups, including Haitians, Africans, Hmong, Mexicans, Native Americans, and traditional communities. With private and public partners, NIFI staff supports partner organizations with training development, program coordination, mentoring, communication and network development; NIFI produces educational materials that are linguistically appropriate, culturally-relevant, and accessible; NIFI facilitates connections with USDA programs.

VIRGINIA
Virginia State University - Outreach, Training, and Technical Assistance Program

Derrick Cladd and Michael Carter (Virginia State University)

The Virginia State University Small Farm Outreach Program provides a wide range of opportunities for small, limited-resource and beginning farmers and U.S. military veterans who want to achieve profitability through successful growing and marketing strategies. Our aim is to help you develop and improve farm management practices for a thriving operation that can be sustained for years to come.

Connect with agents and specialists in the Small Farm Outreach Program for educational programs, technical assistance and access to services available through state and federal agencies. Virginia State University’s Small Farm Outreach Program collaborates with USDA and Virginia’s Department of Agriculture and Consumer Services (VDACS) to offer expertise on every aspect of your farming operation, from planting and marketing crops to recordkeeping and tax planning. Best of all, most educational programs through Small Farm Outreach are offered free of charge!

Virginia State University Small Farm Program - Precision Agriculture for the Small Farmer

Alvin Adkins (Virginia State University)

Precision agricultural practices traditionally have been considered feasible only for large-scale farms; however, VSU Small Farm Outreach Program has demonstrated many precision agronomic practices can actually be performed on very small farm operations in a very cost-feasible way. This exhibit demonstrates a wide variety of precision Ag practices, which includes light bar and auto steering technology, calibration and maintenance, GPS, and safety practices.
Local Food Systems: Setting the Stage for a Sustainable Pearisburg Community Market

Jeannie Dudding (Virginia Cooperative Extension - Giles/Bland County); Walker, M.A. (Community Viability, Central District Extension Office); Vallotton, A.D (Horticulture Department, VT); Eifert, J.A. (VT Food Innovation Program); Morgan, K.L and Ferreira, G.E. (Agricultural & Applied Economics, VT); Scott, K.H. (ANR, Montgomery County); Straw, R.A. (SWVA AREC, Glade Spring, VA); Nartea, T.J. (VCE Marketing /Agribusiness, VSU); Persia, M.E. (Extension Poultry Specialist, VT)

Demand for local food in southwest Virginia resulted in Pearisburg receiving a $99,000 Farmers Market Promotion Grant for the establishment of a community farmer's market. Agricultural production/profitability and nutrition/obesity/health make the priority list in the Giles Situation Analysis. Virginia Cooperative Extension engaged with the town to design the proposal and deliver the needed programming. These efforts have been carried out through a collaboration of agents, specialists, and professors. In 2015 we delivered programs covering food safety from farm to market, product pricing/marketing, value-added product development, and a “speed-dating” for growers and buyers. In 2016, we have covered growing produce for direct sales, small-flock poultry, and marketing strategies. This effort can be mirrored to meet the demands in other communities in addressing the need for a safe and adequate food supply.

The area that this success story best addresses is outreach, training, and research priorities for underserved audiences. The participants have been new and beginning farmers starting into direct sales. Programming like this has been limited; therefore, we are serving an underserved audience. Markets are popping up in our region so programs of this nature are necessary not only to help “Create and Sustain Small Farmers and Ranchers” but also to sustain these markets so that fresh, local food is available.

Extension played an important role in securing this grant funding, however, the larger impact has been the result of special programming efforts related to local foods, farmer’s market vendor training, and establishment of networking opportunities for local growers and buyers.

Appalachian Beginning Forest Farmer Coalition: Growing Opportunities Beneath the Forest Canopy

John Munsell, Holly Chittum (Virginia Tech)

The Appalachian Beginning Forest Farmer Coalition (ABFF) is a project dedicated to increasing opportunities for small-scale farmers and forestland owners in Appalachia and beyond who are interested in starting or expanding/diversifying a forest farming operation. Funded by NIFA under the Beginning Farmer and Rancher Development Program (BFRDP), the ABFF is the first of its kind within the BFRDP program to focus specifically on forest farming. The ABFF promotes and expands cultivation and conservation of native non-timber forest medicinal products and prepares Appalachian forest farmers to supply verified and organic forest grown raw material to nutraceutical and herbal product industries by providing technical, administrative, and market sales training, and opportunities for farmer-farmer and farmer-industry representative networking.

The coalition also improves access to farm resource inventory and plant habitat management support services by providing targeted medicinal plant forest farming training to extension and other agency service personnel and linking them with forest farmers in their area.

The project is a collaboration across multiple academic institutions and governmental and non-governmental organizations including the USDA Forest Service, Virginia Tech, Penn State, North Carolina State, the Maryland University of Integrative Health, Appalachian Sustainable Development, United Plant Savers, Rural Action, the Blue Ridge Woodland Growers, the USDA National Agroforestry Center, the Pennsylvania Department of Conservation and Natural Resources, and the Southern Regional Extension Forestry Network. ABFF project directors will exhibit a broad range of materials, resources, and activities with banners, videos, and table cloth backdrops to enhance awareness of forest farming opportunities for small producers.

Eastern Shore Agricultural Research and Extension Center, Virginia Tech

Mark S. Reiter, Ramon A. Arancibia, Charles Cahoon, Steve Rideout, Thomas Kuhar, and Laura Straw (Eastern Shore Agricultural Research and Extension Center, Virginia Tech)

Virginia ranks tenth in overall vegetable production nationwide and in the top five for fresh market tomatoes, including organic production. The majority of vegetables produced in Virginia are grown on the Eastern Shore, but production across Virginia also plays a role in local communities and regional food systems.

The faculty and staff at the Virginia Tech Eastern Shore AREC are dedicated to food production systems research, extension, and education in the Crop & Soil Environmental Sciences, Horticulture, Entomology, Plant Pathology & Weed Science, and Food Science & Technology Departments.

Our programs include:

1. Developing and promoting production practices to improve sustainability in vegetable crops;
2. Educating stakeholders on soil and nutrient management and environmental sustainability;
3. Identifying diseases and applying control tactics to serve producers and homeowners;
4. Informing stakeholders on food safety and microbiological quality of produce;
5. Promoting weed control technologies to reduce the development of resistance to herbicides; and

If you have any questions regarding your production system, you can reach our team members at: 757.414.0724.
NRCS Assistance for Organic and Transitioning Producers

Suzanne Pender (USDA Natural Resources Conservation Service)

NRCS helps America’s farmers, ranchers and forest landowners conserve the nation’s soil, water, air and other natural resources. Through field offices in nearly every county of the country, NRCS conservationists provide technical assistance by working one-on-one with producers to help them meet their conservation goals. All NRCS programs are voluntary and offer science-based solutions that benefit both the landowner and the environment.

NRCS’ exhibit will focus on the agency’s “locally led and partner driven” approach and will also feature information on assistance available for organic producers. A third booth, featuring Virginia NRCS, FSA and RD, will highlight USDA programs and services to help traditionally underserved producers and improve economic opportunity and quality of life in rural communities.

For more information, visit www.nrcs.usda.gov and www.va.nrcs.usda.gov.

USDA-NASS Agency Overview

Herman Ellison (USDA-NASS; State Statistician for Virginia)

The USDA’s National Agricultural Statistics Service (NASS) conducts hundreds of surveys every year and prepares reports covering virtually every aspect of U.S. agriculture. Production and supplies of food and fiber, prices paid and received by farmers, farm labor and wages, farm finances, chemical use, and changes in the demographics of U.S. producers are only a few examples.

NASS is committed to providing timely, accurate, and useful statistics in service to U.S. agriculture. To uphold our continuing commitment, NASS will:

• Report the facts on American agriculture, facts needed by people working in and depending upon U.S. agriculture.

• Provide objective and unbiased statistics on a preannounced schedule that is fair and impartial to all market participants.

• Conduct the Census of Agriculture every five years, providing the only source of consistent, comparable, and detailed agricultural data for every county in America.

• Serve the needs of our data users and customers at a local level through our network of State field offices and our cooperative relationship with universities and State Departments of Agriculture.

• Safeguard the privacy of farmers, ranchers, and other data providers, with a guarantee that confidentiality and data security continue to be our top priorities.

Virginia Tech College of Agriculture and Life Sciences and Virginia Cooperative Extension

Robert Grisso (VCE-Virginia Tech)

The display of Virginia Cooperative Extension (VCE) include extension programs at Virginia Tech and Virginia State University. The Agricultural and Natural Resources, Food and Consumer Sciences and Positive Youth Development are programs delivered by VCE. The outreach programs are supported by faculty, demonstrations, webinars, and publications. The resources can be accessed at: http://www.ext.vt.edu/index.html

Virginia Beginning Farmer and Rancher Coalition Program

Allyssa Mark and Kim Niewolny (VCE-Virginia Tech)

The Virginia Beginning Farmer & Rancher Coalition Program (VBFRCP) is a state-wide and coalition-based Extension program in Virginia. Our long-term goal is to improve opportunities for beginning farmers and ranchers to establish and sustain viable agricultural operations and communities in Virginia. To reach this goal, the VBFRCP supports the development and enhancement of whole farm planning curriculum and training, online resources, social networking, and farmer mentoring. Unique to this effort is a coalition of organizations and agencies that work together to co-develop and implement programming aims.

This program Coalition formed in the fall of 2010 as a way to more effectively address start-up needs of Virginia’s beginning farmers and ranchers. Coalition partners represent a diverse stakeholder group:

• Virginia Cooperative Extension (VCE)

• Virginia Tech (VT) and Virginia State University (VSU)

• Beginning and Established Farmers

• Non-governmental Sector

• State and Federal Government

The Coalition acts as an umbrella network of organizations to assist in the development and enhancement of VBFRCP whole farm planning programs, educational resource support, service provider referrals, and networking. Coalition service providers have ample experience and real-world knowledge that beginning farmers and ranchers seek:

• Marketing

• Sustainable farming practices

• Business management and financial planning

• Land acquisition and tenure

• Farm safety and health
AgrAbility Virginia

*Kirk Ballin (Easter Seals UCP North Carolina and Virginia & Virginia Cooperative Extension)*

The AgrAbility Virginia program strives to enhance the quality of life of individuals and their families who farm by helping them to work safely and effectively with dignity. This program is a partnership among Virginia Tech, Virginia Cooperative Extension, and Easter Seals UCP North Carolina & Virginia. AgrAbility Virginia uniquely integrates its programming into Virginia’s rehabilitation and agricultural service delivery system to increase organizational capacity and provide the best quality education and services for farmers.

Virginia Cooperative Extension

*Bob Grisso (Virginia Cooperative Extension, Blacksburg, VA)*

Virginia Cooperative Extension puts university knowledge into the hands of people. We are credible experts and educators who provide information, education, and tools you can use every day to improve your life.

Virginia Department of Agriculture and Consumer Services

*Andy Sorell, Kathy Ruhr (Richmond, VA)*

Established in 1877, the Virginia Department of Agriculture and Consumer Services (VDACS) promotes the economic growth and development of Virginia agriculture, provides consumer protection and encourages environmental stewardship. The agency is headquartered in Richmond and has several field offices, four regional diagnostic animal health laboratories and a global network of representatives promoting Virginia products internationally.

Washington State University - Farm and Food Systems Team

*Doug Collins and Marcia Ostrom (Washington State University Small Farm Program)*

Since 2000, the WSU Small Farms Team has worked with communities and individuals across Washington to foster a profitable farming system, to promote land and water stewardship, and to ensure that all Washingtonians have unrestricted access to healthy food. The Team provides research-based information and educational programs for farmers, consumers, decision-makers, and others involved in local food systems. The team is a statewide affiliation of professionals from WSU, state agencies, and non-governmental organizations. The work of the Small Farms Team will continue under a new name: The WSU Farm and Food Systems Team.

Our primary goals are to:

- Help farmers adopt practices that are sustainable—economically, socially and environmentally
- Unify farmers and consumer in developing local markets and community food access

The Farm and Food Systems Team is a program of the Center for Sustaining Agriculture and Natural Resources in WSU Extension and the College of Agricultural, Human, and Natural Resource Sciences. The program focuses on education resources for farmers, outreach to communities, and team-based research with farmers.

West Virginia

WV AgrAbility

*Inetta Fluharty (West Virginia State University)*

Farming is one of the nation’s most dangerous professions because it includes a combination of difficult working conditions, hazardous equipment, and animals that can become out-of-control. At times, an accident, chronic health condition or the aging process may make it difficult to work or manage the farm.

West Virginia AgrAbility assists farmers who have physical disabilities or cognitive limitations find ways to overcome new and unfamiliar barriers allowing them to continue in their chosen agriculture related professions. It is our belief that farmers with disabilities can attain or maintain independence by making informed decisions about how they want to live and work on their farm.

This interactive display will demonstrate the partnership between an 1862 and 1890 Land Grant Institution with a disability non-profit agency to provide services to farmers with illness or injury. It will highlight modifications of equipment and how assistive technology enables farmers to remain in the agriculture operation of their choice.
Posters, Success Stories, and Exhibits (LEVEL 1: Exhibit Hall A)

Floor Dimensions: 150ft x 250ft

- 8 x 10 ft. Exhibit Booth
- 4 x 8ft. Poster Board
THE 7TH NATIONAL SMALL FARM CONFERENCE IS HOSTED BY

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