

# VSU **College of Agriculture**

VIRGINIA STATE UNIVERSITY

## 2017 Impact Statements

### VIRGINIA COOPERATIVE EXTENSION



**Virginia Cooperative Extension**  
Virginia Tech • Virginia State University

VIRGINIA STATE UNIVERSITY | COOPERATIVE EXTENSION

Dr. M. Ray McKinnie, Dean of the College of Agriculture and 1980 Administrator  
Virginia State University  
(804) 524-5262  
mmckinnie@vsu.edu

This report was compiled and edited by Dr. Theresa J. Nartea

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## Growing profitability for Virginia’s urban agriculture businesses through the development of the VSU Sustainable Urban Agriculture Certification Program curriculum

### *Who cares and why?*

Nearly 75 percent of the U.S. population resides within 200 miles of a city representing potential customers for produce and livestock products grown on urban farms. A 2013 USDA survey of 315 U.S. urban farm producers cited their greatest training need was achieving and maintaining business profitability. The survey determined there was a lack of educational training to assist urban farm producers in being profitable.

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### *What is the background of this project?*

In 2017, VSU-CE’s Sustainable Urban Agriculture (Dr. Githinji) and Marketing & Agribusiness (Dr. Nartea) programs collaborated to develop the VSU CE Sustainable Urban Agriculture Certification Program curriculum to train 29 participants how to plan a profitable urban farm.

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### *What has project done in 2017?*

Due to the development of the VSU-CE Sustainable Urban Agriculture Certification Program curriculum, 29 individuals attending the spring 2017 program who plan to start an urban farm in Virginia, created their personal urban farm business plan with a focus on profitability. 100% of participants agreed that prior to attending the certification program, they were unaware of how to research and write their personal urban farm business plan.



*Pictured above: VSU SUA certification participants ready to learn*

100% of participants stated that the VSU-CE business planning curriculum and training were needed to develop their own business plan. After creating their personal business plan, 100% of participants believed that the development of their personal business plan was key to their future business profitability after starting their urban farm in Virginia.

### *Impacts*

Through the development of a targeted curriculum approach focused on developing profitable urban farm businesses, the VSU-CE Sustainable Urban Agriculture Certification Program is specifically addressing a pre-determined national need of educational programming for achieving and maintaining urban farm business profitability. At the end of 2017, through the conduct of both spring and fall VSU-CE Sustainable Urban Agriculture Certification Programs, 60 participants were trained in creating their personal urban farm business plan to serve as the foundation for a profitable urban farm business in Virginia. Additionally, new VSU-CE sustainable urban agriculture curriculum was developed to serve as a model for other 1890 institutions hoping to start urban agriculture certification programs in their states.

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### *VCE Planned Program Area*

Agriculture Profitability and Sustainability

### *Project support*

1890 Extension Funds; USDA-NIFA grant

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### *USDA Primary (P) and Secondary (S) focus area*

P-Agricultural Systems; S- Food Security

### *Want to know more?*

Dr. Leonard Githinji, [lgithinji@vsu.edu](mailto:lgithinji@vsu.edu)  
Dr. Theresa Nartea, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)

## Equipping Virginia small farmers to compete for lucrative berry markets in Mid-Atlantic US

### Who cares and why?

Virginia small growers seek profitable crops with proven market demand. National sales of berries have skyrocketed propelled by medical research and media promotion of disease prevention benefits. With extension demonstration training, limited resource, small acreage growers may capitalize on local sales of berry crops suitable for Virginia climatic conditions.

*Pictured right:* Virginia grown blueberries for \$5 per pint yields high profits for small-scale farm families.



*Pictured above:* Different berries grown at VSU Randolph Farm are field trialed for yield and quality in Virginia

### What is the background of this project?

The VSU-COA Small Fruits and Vegetable Program has grown and identified 55 different raspberry, blackberry and blueberry varieties with high yields and quality for Virginia climates. Through \$720,000 of federal and state funded grants, management techniques were developed to train VCE Extension Agents statewide on the effective production and marketing of berry crops.

### What has happened in 2017?

- 55 small farmers currently are growing and marketing locally produced berry crops
- 37 seasonal jobs were created to support small berry industry
- 279,480-one pint clamshells (9.4 MT) were produced by VSU-VCE trained participant farmers
- 110 growers and consumers attended the 2017 VSU Berry and Vegetable field-day

### What are impacts of this project?

Berries produced by VSU-VCE trained participant farmers had a total 2017 Virginia farmer's market value ([VDACS, 2017](#)) range of \$1,257,660 (\$4/pint) to \$1,676,880 (\$6/pint) or a total wholesale value of \$456,000 (\$1.63/pint)

- 18 former tobacco growers have converted to berry production in Southside Virginia region
- 37 seasonal jobs (picker/packer) were created in the tobacco region of Southside Virginia with minimum wage of \$7.25 per hour, 29 hours per week for 12 weeks per year totaling \$93,351 in gross income for seasonal farm workers.

### VCE Planned Program Area

Agriculture Profitability and Sustainability

### USDA Primary (P) and Secondary (S) focus area

P-Agricultural Systems; S-Alternative Agriculture

### Project support

USDA 1890 Capacity Building Grant  
Virginia Tobacco Indemnification Community Revitalization Grant

### Want to know more?

Dr. Reza Rafie, [arafie@vsu.edu](mailto:arafie@vsu.edu)  
Dr. Theresa Nartea, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)  
Mr. Chris Mullins, [cmullins@vsu.edu](mailto:cmullins@vsu.edu)

## Breaking ground for small farmers to gain firm footing on emerging turmeric market in Virginia

### Who cares and why?

In 2017, [Governor McAuliffe declared opioid addiction in Virginia a public health emergency](#). The misuse of opioid drugs to alleviate chronic pain has led to rising death rates in the Virginia population due to unnatural causes. Recent pharmaceutical studies point to turmeric having potential to reduce opioid dependence ([Hu, Huang, Szymusiak, & Liu, 2015](#)). Additionally, [food researchers](#) attribute turmeric as a potential food source to naturally reduce inflammation contributing to chronic pain.

### What is the background of this project?

Due to the emerging public interest in purchasing fresh turmeric, the VSU COA Small Fruits and Vegetable Program initiated several test plots growing and test marketing Virginia grown turmeric. On-farm demonstrations at VSU Randolph Farm determined turmeric may be successfully grown under protection of high tunnel culture. Several collaborating farmers were identified to grow and test market turmeric. To further investigate turmeric health benefits, clinical research is being conducted by a team of scientists (VSU, VT and VCU).



Pictured above: Fresh turmeric is priced high (\$24.99/lb) at farmer's markets due to consumer demand in Virginia



Pictured above: Virginia grown turmeric packaged as a value added "Golden Paste" product

### What has happened in 2017?

- 35 small growers participated in on-farm field production and marketing demonstrations
- 119 workshop participants received training on production, marketing and value added product development for turmeric
- 250 turmeric plants grown and distributed to interested Virginia small farmers
- 1,250 pounds fresh turmeric (5 lb/plant) harvested by participating farmers
- \$100,000 grant funds awarded to VSU CE & ARS to conduct clinical research related to Virginia grown turmeric health benefits

### What are impacts of this project?

- 35 small growers were trained to produce and market 20,000 ounces, or 1,250 pounds of fresh turmeric grown valued at \$31,237 total direct market value (\$1.56/oz. or \$24.99/lb)

### VCE Planned Program Area

Agriculture Profitability and Sustainability

### Project support

1890 Extension Funding  
VSU CAREO Grant

### USDA Primary (P) and Secondary (S) focus area

P-Agricultural Systems; S-Alternative Agriculture

### Want to know more?

Dr. Reza Rafie, [arafie@vsu.edu](mailto:arafie@vsu.edu)  
Dr. Theresa Nartea, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)  
Mr. Chris Mullins, [cmullins@vsu.edu](mailto:cmullins@vsu.edu)

## A unique opportunity to train tomorrow's dietitians: "VSU farm to table dietetic internship"

### Who cares and why?

With the increase the availability of local grown foods, the majority of the nearly 90,000 registered dietitians have not received formal training in the local food supply chain from farm to table. Without raised awareness, knowledge, and skills in the availability and challenges of growing and marketing local grown foods by small farmers, practicing dietitians may have a negative influence on connected issues of food access, food security, and small farm viability by not encouraging limited resource clients and the public to purchase and include local farm foods in a recommended healthy diet.

### What is the background of this project?

Since 1995, the Virginia State University (VSU) Dietetic Internship Program (VSU DI) through the leadership of the VSU Family and Consumer Services Department, has provided a 40 week intensive training for dietetic students to meet the eligibility requirements of the Accreditation Council for Education Nutrition and Dietetics (ACEND). Over time, instructors realized students would be enriched to learn about food production, since learning about how food is produced would inform future dietitians on the connection between how food is grown and human dietary health. In 2010, the VSU DI incorporated a 3-week "Farm to Table" rotation in cooperation with VSU Cooperative Extension Faculty and Staff. The rotation included hands on production and marketing education and activities to engage dietetic students in the challenges farmers deal with to grow and sell produce. The skills learned by dietetic students provided knowledge they will continue to use to teach consumers to purchase, prepare, and eat.

### What has happened in 2017?

- Eight dietetic students have received training about production and marketing of fresh fruits and vegetables. These students participated in growing, harvesting, packaging, and marketing different crops
- Four extension bulletins on various 'Superfoods' grown at Randolph Farm were developed by the participating dietetic students
- Five healthy, low budget recipes were developed by participating dietetic students for use by low income consumers in Virginia



Pictured above: 2017 VSU Dietetic Interns Farm Stand showcased at the VSU Agriculture Field Day

### What are impacts of this project?

- Since 2010, 56 VSU dietetic interns have graduated as certified dietitians with the knowledge and experience of where local foods come from and the importance of including local foods in the healthy diets of clientele; 28 superfoods bulletins written; and 35 healthy, low cost recipes developed for low-income consumers in Virginia using local grown foods

### VCE Planned Program Area

Agriculture Profitability and Sustainability

### Project support

1890 Extension Funding

### USDA Primary (P) and Secondary (S) focus area

P-Agricultural Systems; S-Alternative Agriculture

### Want to know more?

Dr. Reza Rafie, [arafie@vsu.edu](mailto:arafie@vsu.edu)

Dr. Theresa Nartea, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)

Dr. Crystal Wynn, [cwynn@vsu.edu](mailto:cwynn@vsu.edu)

## Increasing VSU campus health and local food access through the VSU farmers market

### Who cares and why?

Virginia State University is an 1890 Land Grant College with a long history of agricultural education. Unfortunately, many VSU employees and students may not be aware of the VSU research farm located within a 2 minute drive from campus. With public interest in eating a healthy diet of five to seven produce items daily there is a great opportunity to educate VSU campus employees and students about local farming through the conduct of a [campus farmers market](#).



Pictured above: VSU students and employees are all smiles enjoying hanging out at the VSU farmers market on campus

### What is the background of this project?



Pictured above: VSU employees shopping for VSU grown local produce at the VSU farmers market on campus

In 2016, interested faculty and staff from the College of Agriculture responded to interest in establishing a VSU farmers market on campus. To determine feasibility, several farmer markets were conducted at Randolph Farm to measure employee interest in buying VSU grown produce. The VSU faculty and staff responded favorably and in 2017 from June until October, the VSU Farmers Market was established on campus.

### What has happened in 2017?

- 1,101 faculty and staff were made aware of the existence of the VSU farmers market and its relationship to the VSU Randolph research farm through email notifications from the Provost
- Five campus farm market sales were conducted from June to October 2017
- 350 employees and students visited or shopped at the farmers market
- 600 lbs. VSU grown vegetables and 250 lbs. VSU grown berries were sold (\$3,200 market value)
- VSU employees saved \$1,600 in produce purchases (prices were sold ½ of market value)

### What are impacts of this project?

- This initiative allowed all VSU faculty and staff to become aware of and become familiar with VSU Randolph Farm and related research and extension projects. It has fostered opportunities for cross campus collaboration in the areas of teaching, research and outreach.

### VCE Planned Program Area

Agriculture Profitability and Sustainability

### Project support

1890 Extension Funding

### USDA Primary (P) and Secondary (S) focus area

P-Agricultural Systems; S-Alternative Agriculture

### Want to know more?

Dr. Reza Rafie, [arafie@vsu.edu](mailto:arafie@vsu.edu)

Dr. Theresa Nartea, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)



## Increasing producer sales of lamb products grown in Virginia through consumer awareness

### Who cares and why?

Virginia producers raise over 89,000 sheep which equates to over 2.6M pounds of lamb meat (30 pound average per sheep carcass) per year. Virginia sheep producers are challenged in selling lamb meat directly to mainstream consumers who prefer chicken, beef, and pork, over lamb meat. In order for the Virginia sheep industry to be profitable in direct sales market outlets, sheep producers and VCE Agriculture and Natural Resources, and Family and Consumer agents should be aware of novel ways of educating consumers on eating Virginia grown lamb products on a regular basis as a healthy meal choice.



LAMB	
	\$ per lb.
leg of lamb	13.99 lb
leg roast boneless	15.99 lb
leg steaks	13.99 lb
Shoulder roast boneless	10.99 lb
	11.99 lb
Chops loin-rib	18.99 lb
Crown roast	18.99 lb
Stew	9.99 lb
Ground	9.99 lb
Shanks	10.99 lb
Filets	7.99 lb

Pictured above: Lamb price sign at a Virginia farmers market

### What is the background of this project?

In 2017, VSU-CE's Small Ruminant (Dr. O'Brien) and Marketing & Agribusiness (Dr. Nartea) programs collaborated to develop educational materials to train over 120 producers, agents, and consumers on how to buy and eat more Virginia grown lamb through multiple demonstrations conducted in Roanoke and Petersburg, VA.

### What has happened in 2017?

- 50 producers and 3 VCE ANR agents learned about how to display lamb meat
- 120 participants tried prepared recipes such as: Lamb Nachos, Lamb Tacos, Lamb Sausage and Gravy, and Lamb Sliders
- 36 participants who did not eat lamb prior to the tasting events stated they would seek out and purchase local lamb meat and would pay up to \$5.00 per pound for Virginia grown lamb
- 120 participants would consider substituting local lamb for chicken, pork, and beef recipes in the future
- Conducted the first university based lamb CSA program and sold 151 VSU lamb cuts to 21 individuals at VSU

### What are impacts of this project?

- 50 producers receiving marketing training believed training would increase existing farm income from lamb sales by a minimum of \$500 or 10%, with a minimum increase of \$25,000 total new sales from 2016 using the marketing techniques of CSA or farm stand display improvements
- VSU CSA order materials developed serve as a model for Virginia Lamb Producers
- 120 program participants increased awareness of eating more local lamb



Pictured above: Local farm sign promoting grass fed lamb in Virginia

### VCE Planned Program Area

Agriculture Profitability and Sustainability

### Project support

1890 Extension Funding

### USDA Primary (P) focus area

P-Agricultural Systems

### Want to know more?

Dr. Dahlia O'Brien, [dobrien@vsu.edu](mailto:dobrien@vsu.edu)

Dr. Theresa Nartea, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)

## VSU sustainable and urban agriculture program enhances community access to fresh produce

### Who cares and why?

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A food desert is defined as an area where residents do not have access to affordable and nutritious food. Food deserts are often located in low income areas of a city and lack major grocery stores, farm markets, and healthy food retailers. Within food deserts, residents are considered food insecure meaning they are not sure where their food will come from. In Virginia, approximately 17.8 percent of the population lives in a food desert, many of these areas exist in Southside region, but also in the Central, West Central, and Hampton Roads regions of Virginia.

### What has project done so far?

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To respond to the food desert situation the VSU Sustainable and Urban Agriculture Program conducted intensive educational activities within Virginia food desert communities to teach how to grow, prepare, and market fresh produce. Examples of training events offered are:

- Educational workshops
- Field days
- In-service trainings
- Hands-on experiential learning
- Field demonstrations
- Community garden establishment



*Pictured above:* Children begin planting community garden in Petersburg, VA

### Impacts

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- 150 individuals were made aware of the VSU sustainable and urban agriculture program
- 180 participants received in-class training in sustainable urban agriculture practices
- 70 participants have received hands-on training in sustainable urban agriculture
- 65 participants had a change behavior towards sustainable and urban agriculture
- 25 participants made make decisions to start urban agriculture projects
- Four community based organizations started educational gardens

Potential impacts estimated from program activities may result, such as:

- A minimum of 15% increase in vegetable production within Virginia food deserts
- A minimum 10% reduction in cost of fruits and vegetables
- A minimum 10% increase in local income for market gardens in food deserts
- A minimum 10% increase in urban food security

### VCE Planned Program Area

Community Viability

### Project support

1890 Extension Funding

### USDA Primary (P) and Secondary (S) focus area

P-Food Security; S-Youth, Family, & Communities

### Want to know more?

Dr. Leonard Githinji, [lgithinji@vsu.edu](mailto:lgithinji@vsu.edu)

## Training Virginia small, limited–resource, and socially disadvantaged producers



Pictured above: Teaching farm equipment repair workshop

### *Who cares and why?*

Small farmers in Virginia have been faced by several barriers that limit their ability to successfully operate a profitable farm business. Such barriers are, but not limited to,; 1) Lack of knowledge of USDA programs and services, 2) limited access to credit and capital, 3) lack of skills in farm business and financial planning, 4) lack of knowledge of improved production practices and 5) limited access to existing and viable markets.

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### *What is the background of this project?*

Through federal and state funding, the Virginia State University – Small Farm Program (VSU-SFOP) primary outreach efforts are to equip small farmers with the tools and skills needed for them to make informed decisions in operating successful profitable farm businesses through outreach, training and technical assistance, in a holistic manner, thereby enhancing their economic opportunities and quality of life.

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### *What has project done in 2017?*

Over 100 educational outreach events informing producers about the following topics:

- USDA programs and services
- Farm business planning and financial management workshops
- Improved production systems for high value and profitable crops and livestock
- Hands-on demonstrations with appropriate small farm tools and equipment
- Marketing strategies to enhance their farm profits

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### *Impacts*

In July 2017, VSU-SFOP Conducted a progress evaluation survey of 1000 small farmers based on the above activities conducted. The results were: 77% of the respondents indicated that VSU-Small Farm Program has helped them to gain a better understanding of operating and maintaining a small farm. 65% of them indicated that the knowledge gained from VSU hands-on demonstrations, field days, workshops and other activities has improved profits in the farm business. 51% of them reported an increase in farm incomes by at least 10% from the previous three years. As a result of attending VSU SFOP trainings, 510 small farmers in Virginia reported a 10% increase in farm income from the previous three years.

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### *VCE Planned Program Area*

Agriculture Profitability and Sustainability

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### *Project support*

1890 Extension Funding  
USDA-NIFA grant funds

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### *USDA Primary (P) and Secondary (S) focus area*

P-Agricultural Systems; S-Alternative Agriculture

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### *Want to know more?*

Mr. William Crutchfield,  
wcrutchfield@vsu.edu

## Providing sustainable integrated control strategies for small ruminant dewormer resistance

### Who cares and why?

Infection with internal parasites, especially the barber pole worm (*Haemonchus contortus*), is the number one health problem affecting sheep and goats. Traditionally, producers relied on chemical treatments (dewormers) to control infections. However, due to misuse and over-use, internal parasites have developed resistance to multiple classes of available dewormers. There is now an urgent need for producers to adapt sustainable integrated control strategies for parasite control to reduce reliance on chemical dewormers and prolong their efficacy on farms. In order to do this producers need training in sustainable integrated parasite management techniques and assistance in determining the status of dewormer resistance on their farms in order to develop effective parasite control strategies.



*Pictured above:* Barber pole worm infection

### What has project done so far?



To address this issue, the VSU CE small ruminant program has conducted workshops on internal parasite management, offered FAMACHA© certification training to extension agents and producers, conducted fecal egg counting training (to determine dewormer resistance, make selection choices and determine pasture infestation), assisted producers in determining the status of dewormer resistance on their farm, and conducted direct technical assistance for ANR extension agents in order to increase their awareness, knowledge, and skills in guiding small ruminant producers in Virginia.

*Pictured left:* Producer applying FAMACHA© technique

### Impacts

- Extension programs conducted increased knowledge of 250 producers and agents on small ruminant internal parasite management
- 60 small ruminant producers received FAMACHA© certification
- 60 producers developed skills in conducting fecal egg counts
- Three producers made of aware of dewormer resistance status on their farm and were provided with individualized treatment recommendations for controlling parasites in their flock

### VCE Planned Program Area

Agriculture Profitability and Sustainability

### Project support

1890 Extension Funding

### USDA Primary (P) and Secondary (S) focus area

P-Agricultural Systems, S-Livestock Management

### Want to know more?

Dr. Dahlia O'Brien, [dobrien@vsu.edu](mailto:dobrien@vsu.edu)

## VSU Cooperative Extension Faculty List of Contacts

### VSU COOPERATIVE EXTENSION LEADERSHIP TEAM

Dr. M. Ray McKinnie, Dean of the College of Agriculture and 1980 Administrator [mmckinnie@vsu.edu](mailto:mmckinnie@vsu.edu)

Mrs. Mary Gromovsky, Director of Financial Services [mgromovsky@vsu.edu](mailto:mgromovsky@vsu.edu)

Mrs. Michelle Olgers, Director of Marketing and Communications [molgers@vsu.edu](mailto:molgers@vsu.edu)

### COOPERATIVE EXTENSION PROGRAM FACULTY

Dr. Marcus Comer, Specialist-Natural Resource Management [mcomer@vsu.edu](mailto:mcomer@vsu.edu)

Dr. Leonard Githinji, Specialist Sustainable /Urban Agriculture [lgithinji@vsu.edu](mailto:lgithinji@vsu.edu)

Mr. Joel Koci, Extension Associate-Urban Forestry [jkoci@vsu.edu](mailto:jkoci@vsu.edu)

Mr. Christopher Mullins, Specialist-Greenhouse [cmullins@vsu.edu](mailto:cmullins@vsu.edu)

Dr. Theresa Nartea, Specialist-Marketing and Agribusiness, [tnartea@vsu.edu](mailto:tnartea@vsu.edu)

Dr. Dahlia O'Brien, Specialist-Small Ruminants, [dobrien@vsu.edu](mailto:dobrien@vsu.edu)

Dr. Reza Rafie, Specialist-Horticulture, [arafie@vsu.edu](mailto:arafie@vsu.edu)

Dr. David Crosby, Specialist-Fish Health, [dcrosby@vsu.edu](mailto:dcrosby@vsu.edu)

Dr. Brian Nerrie, Specialist-Aquaculture, [bnerrie@vsu.edu](mailto:bnerrie@vsu.edu)

Dr. Larry Connatser, Specialist-Family Resource Management, [lconnatser@vsu.edu](mailto:lconnatser@vsu.edu)

Ms. Wanda Johnson, Project Director, Culinary, [wjohnson@vsu.edu](mailto:wjohnson@vsu.edu)

Ms. Debra S. Jones, Specialist-Health & EFNEP Coordinator, [dsjones@vsu.edu](mailto:dsjones@vsu.edu)

Dr. Novella Ruffin, Specialist-Child Development & Parenting, [nruffin@vsu.edu](mailto:nruffin@vsu.edu)

Mr. William Crutchfield, Director Small Farm Outreach, Training & Technical Assistance Program  
[wcrutchfield@vsu.edu](mailto:wcrutchfield@vsu.edu)

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