



# **DINING SERVICES FARM**

## **2014 ANNUAL REPORT**



**This report prepared by Alex Hessler and Rial Carver.**

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*Photographs courtesy of Chelsey Allder, Victoria Betzel, Rial Carver, Glen Duncan and Alex Hessler*

## TABLE OF CONTENTS

Executive Summary.....	1
About the Dining Services Farm.....	2
Dining Services Farm Mission .....	4
Operations and Organizational Structure.....	5
2014 Expenditures.....	6
2014 Harvest Amounts and Market Value.....	6
2014 Produce Distribution Summary.....	7
Student Academic Participation.....	8
Student Volunteering.....	9
Food Bank Partnerships.....	10
Research Partnerships and Support.....	10
Publicity and Project Dissemination.....	12
Lessons Learned.....	13
Ongoing Goals and Progress.....	15
Appendix.....	17

## APPENDIX

2014 Expenses: Paid by Dining Services  
2014 Expenses: Paid by the Department of Horticulture  
2014 Dining Services Farm Harvest Log  
2013 Draft MOU: Horticulture-Dining  
2012 Draft Business Plan: Kentland Community Farm

## EXECUTIVE SUMMARY

The Dining Services Farm (DSF) is a collaboration between Virginia Tech Dining Services, The Department of Horticulture, and the College of Agriculture and Life Sciences (CALs). The DSF began in 2009 as a small garden at Kentland Research Farm to provide experiential learning opportunities for students in the Civic Agriculture and Food Systems Minor and grow fresh produce for Dining Services. The mission of the DSF is to promote sustainable agricultural practices and community food systems by serving as a resource for education, research, and outreach for Virginia Tech and the Blacksburg Community.

In 2014, the DSF operated on approximately six acres at Kentland Research Farm. In summer 2014, a high tunnel was installed at the Urban Horticulture Center as a site for education in extended-season vegetable production. Alex Hessler was hired in January 2014 as the Sustainable Food Systems Production Director, a joint-appointed faculty position in the Department of Horticulture and Dining Services. The responsibilities of this position include management of crop production at the DSF and instruction of undergraduate courses in the Department of Horticulture. Rial Carver, Sustainability Coordinator for Dining Services, oversees farm-to-campus procurement of produce grown by the DSF. Twelve Dining Services employees served as the DSF farm crew from May to August.

Total combined operating expenses for the DSF for Dining Services and the Department of Horticulture in 2014 were \$29,596.69. Thirty-nine different types of vegetables, herbs, and fruit were grown at the DSF and gleaned from Kentland Farm research projects. The harvest total was 40,857 pounds, with a market value of \$22,687.06. Of the total harvest, 5,545 pounds of produce were donated to local food banks.

In Fall 2014, the Sustainable Agriculture Practicum (HORT SS: 4984) was developed and taught by the Sustainable Farming Systems Production Director. Twelve students gained hands-on training in sustainable fruit and vegetable production through two weekly three-hour class sessions held at the DSF and Urban Horticulture Center. Students in five courses in CALs and other colleges participated in field-based activities and independent projects at the DSF. An additional three hundred eighty-five students volunteered a total of seven hundred seventy hours at the DSF in 2014. The DSF partnered to support seven research projects, represented by four faculty members and four graduate students in the Department of Horticulture and the Department of Entomology. The DSF was featured in one online video and five professional presentations.

With support from Kentland Farm personnel, many improvements were made to facilities used by the DSF in 2014. Two existing structures were modified to accommodate increased tool and equipment storage, workshop space, and community and teaching space. A portion of another structure was repurposed as a produce washing and packing shed. Several critical pieces of weed-control equipment were refurbished and put to use on the DSF, allowing for improvements in produce yield and production efficiency. Goals for 2015 include applying for USDA Organic certification and implementing Good Agricultural Practices (GAP) procedures at the DSF.

## ABOUT THE DINING SERVICES FARM

### *History of the Dining Services Farm*

The vision for the Dining Services Farm began in 2008 as a medium for hands-on student educational experiences in sustainable farming and community food systems at Virginia Tech. An educational farm-to-campus program was a pivotal component of an interdisciplinary, experiential-based sustainable agriculture and food systems minor being planned in the College of Agriculture and Life Sciences (CALs). A partnership between CALs, Dining Services, Kentland Research Farm, and the Department of Horticulture was formed to implement a student educational farm at Kentland. A USDA Higher Education Challenge grant, “Restoring Community Foodsheds: A Multidisciplinary Curriculum Translating Science into Practical, Innovate and Sustainable Solutions for Economic Viability, Food Security and Health” was awarded in 2009 – 2013 (Award No. 2009-38411-19770) to develop the Civic Agriculture and Food Systems minor in CALs. Grant funds supplied seeds and equipment and supported a Farm Manager-Educator, a part-time Foodshed Liaison between the farm and Dining Services, and three hourly student wage farm assistants. In 2009, quarter-acre garden at Kentland Farm was designated as a site for experiential learning for students in the minor and the production of fresh produce for Dining Services.

By 2011, the program had grown from its original site to encompass more than two acres at Kentland Farm. Procurement of produce from the farm to campus dining halls was facilitated by a student manager hired by Dining Services in 2011, along with the Dining Services Sustainability Coordinator. The Farm Manager-Educator and the Dining Services Sustainability Coordinator participated in curriculum development for the minor and facilitated student involvement and volunteering at the farm. In 2012, the DSF was managed by an Education and Outreach Coordinator and a student farm manager hired as part-time employees by Dining Services. Two part-time farm managers were hired jointly by Dining Services and the Higher Education Challenge Grant No. 2009-38411-19770 for the 2013 season. By 2014, the DSF had expanded to six acres, and the Farm Manager-Educator position was transitioned to a joint academic-auxiliary instructor-level faculty position financially supported by Dining Services, CALs, and the Department of Horticulture (see Appendix: 2013 Draft MOU: Horticulture-Dining). Dining Services furnishes a farm crew of Dining Services employees from May to August.

### *Student Engagement*

The DSF is a resource for hands-on experiences in sustainable agriculture for students in the Department of Horticulture, CALs, and throughout Virginia Tech. Thousands of students participate in the farm every day when they discover that some of the food they ate on campus was grown on the DSF. Volunteer opportunities give students a chance to explore the excitement and challenges of farming and perform meaningful service for their campus community. This is the first exposure to agriculture for many students, and often inspires a newfound passion for food and farming. The DSF is a partnering program that supports field-based learning activities and independent projects for the Civic Agriculture and Food Systems Minor. The Sustainable Agriculture Practicum was developed in 2014 as a new course in the Department of Horticulture to teach students practical skills in operating a sustainable farm, from planting, soil fertility, and pest management to harvesting and food safety.

Some of these students may go on to become farmers; all of them will carry a first-hand appreciation for sustainable food and agriculture into their personal and professional lives.

### ***Interdisciplinary Research***

The DSF is a unique field laboratory for interdisciplinary research on sustainable agricultural production practices and agroecology. As a working, diversified fruit and vegetable farm, the DSF is a model agricultural system for conducting applied research in a real-world setting. Students and faculty are encouraged to integrate experiments into production fields, and receive technical support from DSF personnel. The interactions between students and researchers at the DSF broadens educational outcomes to include an understanding of agricultural research procedures and career opportunities.

### ***Community Outreach and Extension***

As a highly visible collaborative project on campus and in the community, the DSF is medium for promoting public awareness and understanding of sustainable agriculture and community food systems. The DSF strives to demonstrate agricultural practices that are environmentally sound, socially just, and economically viable. The DSF actively builds relationships with state and local farmers, master gardeners, extension agents, and professionals through tours and presentations. The dissemination of knowledge generated by the DSF supports the advancement the sustainability and profitability of small-scale agriculture in Virginia. The farm-to-campus partnership that brings thousands of pounds of fresh produce in to Virginia Tech dining halls is a model for institutional adoption of community food systems principles and practices.



Pumpkin harvest with the Sustainable Agriculture Practicum course.



## **DINING SERVICES FARM MISSION**

- Educate VT students about sustainable agriculture and food systems by serving produce grown on the Dining Services Farm in Virginia Tech dining halls.
- Provide experiential learning opportunities in sustainable agricultural production through hands-on participation at the Dining Services Farm.
- Foster collaborative, interdisciplinary research and education around food and agriculture among VT students, staff, and faculty.
- Promote awareness of sustainable agriculture and community food systems through community outreach and public education.

## 2014 OPERATIONS AND ORGANIZATIONAL STRUCTURE

### *Operation*

In 2014, the DSF operated on six acres of organically-managed land and 0.75 acres of conventionally-managed land at Kentland Research Farm. Farm equipment and facilities used at Kentland Farm are owned by CALS and the Department of Horticulture, and operated by Kentland Farm personnel. The DSF extended operations to a thirty ft. by ninety-six ft. high tunnel constructed in May 2014 at the Urban Horticulture Center (see Appendix: 2013 Draft MOU: Horticulture-Dining). All of the produce was delivered to Dining Services and distributed to dining halls across the Virginia Tech campus or diverted to local food banks.

### *Organizational Structure*

A diverse group of faculty, staff, and students from Virginia Tech Dining Services, The Department of Horticulture, and the CALS collaborate to achieve the multi-faceted objectives of the DSF. In January 2014, Alex Hessler was hired as the Sustainable Food Systems Production Director and joint-appointed faculty member in the Department of Horticulture and Dining Services. His role is to manage crop production at the DSF and teach classes on sustainable and organic agriculture in the Department of Horticulture.

Name	Title	Role with DSF
Rial Carver	Sustainability Coordinator, Dining Services	Coordinates produce distribution in Dining Services; outreach; coordinates DSF farm crew.
Ted Faulkner	Director, Dining Services	Director of Dining Services
Roger Harris	Department Head, Horticulture	Oversees Horticulture resource allocation.
Bill Hess	Associate Director, Dining Services	Oversees Dining Services resource allocation.
Alex Hessler	Sustainable Food Systems Production Director, Horticulture	Directs DSF crop production; supervises DSF farm crew; teaches Sustainable Ag. Practicum
John James	Urban Horticulture Center Facilities Manager, Horticulture	Manages Urban Horticulture Center Facilities; assists with high tunnel infrastructure.
Dwight Paulette	College Farm Coordinator, CALS	Coordinates Kentland Farm operations and resources.
Anthony Purcell	Assistant Director for Southgate, Dining Services	Oversees DSF produce distribution; coordinates Dining Services resource allocation
Jon Wooge	Kentland Farm Manager, CALS	Manages Kentland Farm staff and operations.
Dining Services Farm Crew	N/A	Assist with vegetable production and harvest, May – Aug.
Sustainable Ag. Practicum	N/A	Assist with vegetable production and harvest, Sept. – Nov.; March – May.



## 2014 EXPENDITURES

Seed	\$3,423.73
Production Materials	\$3,283.00
Supplies	\$3,743.47
Furniture	\$245.00
Fuel	\$1,340.47
High Tunnel	\$17,561.02
<b>Total Operating Expenditures*</b>	<b>\$29,596.69</b>

\* Total does not include cost of labor. See Appendix for distribution of expenses between Dining Services and the Department of Horticulture.

## 2014 HARVEST AMOUNTS AND MARKET VALUE

	<b>Pounds Harvested</b>	<b>Market Value*</b>
Vegetables	33,892	\$17,781.93
Fruit	6,719	\$3,027.13
Herbs	246	\$1,878.00
<b>Total</b>	<b>40,857</b>	<b>\$22,687.06</b>

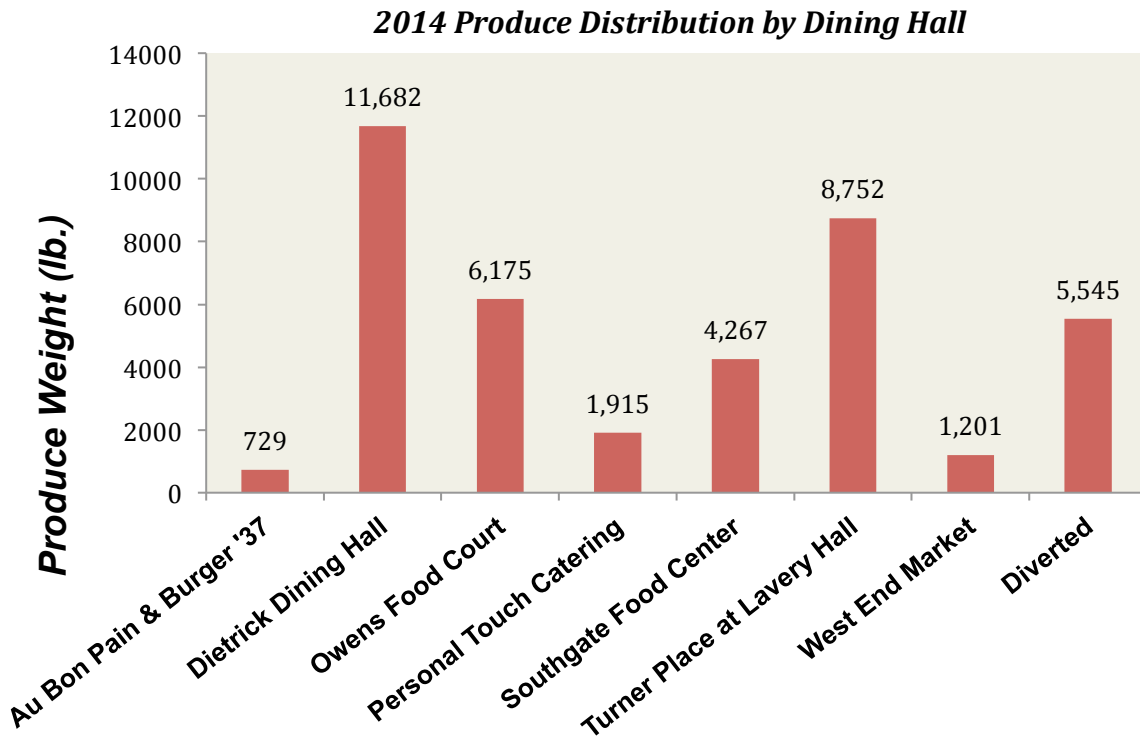
\*Market value calculated from conventional wholesale price. See Appendix for details.

## 2014 HARVEST AMOUNTS BY LOCATION

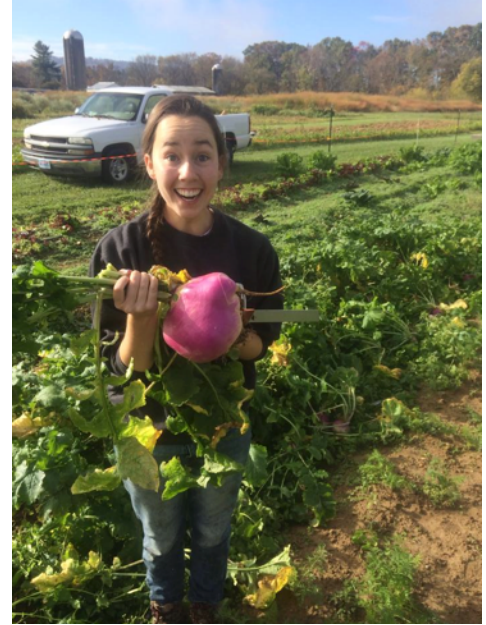
<b>Location</b>	<b>Pounds Harvested</b>
DSF at Kentland	34,057
High Tunnel at Urban Horticulture Center	2,574
Kentland Farm - Research	4,226



**2014 PRODUCE DISTRIBUTION SUMMARY**



The new high tunnel built at the Urban Horticulture Center in 2014.



## STUDENT ACADEMIC PARTICIPATION

### ***Fall 2014 Sustainable Agriculture Practicum (HORT SS: 4984)***

The Sustainable Agriculture Practicum (HORT SS: 4984) was offered as a special studies course in the Department of Horticulture in Fall 2014 to fulfill growing student demand for experiential educational opportunities in the area of sustainable agriculture. This field-based course took place at the DSF at Kentland Farm and the Urban Horticulture Center. Twelve students representing seven undergraduate and graduate degree programs enrolled in 2014. Three separate sections of the course were offered, each meeting for three hours, twice per week. Students applied the fundamental skills required to work on a diversified sustainable farm, including planting, fertility and pest management, irrigation, post-harvest handling, and food safety. Students examined the organizational structure of the farm-to-campus program at Virginia Tech Dining Services as a model for community-based food systems. The course will continue to be offered in the spring and fall semester, with the possibility of a summer session offering in the future.

The DSF engages students in other academic programs and courses in the CALS through tours, activities, and projects. The DSF is a principle community partner in the **Civic Agriculture and Food Systems minor**, serving as a field-site for experiential learning and independent research projects.

Spring 2014 Organic Vegetable Production (HORT 4834)

Fall 2014 Introduction to Civic Agriculture (ALS 2204)

Fall 2014 Ecological Agriculture: Theory and Practice (ALS 3404)

Fall 2014 Capstone: Civic Agriculture and Food Systems (ALS 4214)

Fall 2014 Construction Principles 1 (BC 2014)



Student Chris Youngs, Civic Agriculture and Food Systems Minor.

## STUDENT VOLUNTEERING

- Number of student volunteers: 385.
- Total volunteer hours logged: 770.

Thank you to all the volunteer groups that participated at the Dining Services Farm in 2014. The DSF would not be possible without their hard work and dedication.

**VT Engage**  
**Sustainable Food Corps**  
**Intervarsity Christian Fellowship**  
**Big Event**  
**Alpha Phi Omega**  
**VT Corps of Cadets**  
**VT Student Conduct**  
**Civic Agriculture and Food Systems**  
**Minor**  
**VT Dining Culinary Camp**  
**Tom Kuhar Entomology Lab**  
**Governors School for Agriculture.**



Volunteers from VT Engage and the Corps of Cadets.

## FOOD BANK PARTNERSHIPS

In 2014, the DSF donated 5,545 pounds of produce to local gleaning groups, food pantries, and community organizations. The tireless work of these organizations to ensure that extra produce is given to those in our community who need it most is greatly appreciated. Kentland Farm Manager Jon Wooge was instrumental to the coordination of these efforts between the Dining Services Farm and participating food banks.

Produce grown on the DSF, along with produce from other Kentland Farm research programs, was donated to the following organizations:

St. Mary's Church, Society of St. Andrews, Interfaith Food Pantry, Fieldstone Food Pantry, Dwelling Place Food Pantry, New River Valley Community Services, Montgomery County Emergency Assistance Program, NRV Women's Resource Center, Micah's Backpack, Salvation Army NRV Free Clinic, Little Angels Pre-School, St. John Neumann Academy.

## RESEARCH PARTNERSHIPS AND SUPPORT

The DSF engages in partnerships with CALS faculty and graduate students by facilitating the integration of research projects into production sites managed by the DSF. Additionally, the DSF production manager and farm crew provide assistance to other research projects at Kentland Farm.

### Research partnerships and support in 2014 include:

#### **Farmscaping to Provide Beneficial Insect Habitat in Agroecosystems.**

*Dr. Megan O'Rourke, Horticulture.*

5 blocks of native flowering plants were planted in five DSF production fields. Beneficial insect populations and insect pest control were assessed.

#### **Determining the Conservation Value of High Tunnels.**

*Nate Foust-Meyer, Graduate Student; Dr. Megan O'Rourke, Horticulture.*

A portion of the high tunnel at the Urban Horticulture Center was dedicated to the evaluation of the influence of high tunnels on fruit yield and quality, and plant diseases on tomatoes and cucumbers.



**Control of Colorado Potato Beetle in Organic Potatoes.**

*Dr. Tom Kuhar, Entomology.*

A portion of a quarter-acre field of potatoes on the DSF was dedicated to the evaluation of the experimental organic insecticide PFR-97 for control of Colorado Potato Beetles.

**Trap-cropping for Control of Insect Pests in Organic Tomato.**

*Taliaferro Trope, Graduate Student; Dr. Doug Pfeiffer, Entomology.*

Plot space on the DSF was dedicated to the evaluation of sorghum and sunflower as a trap crop for insect pests of organically-grown tomatoes.

**Stink Bug Monitoring Traps in Community Gardens.**

*John Aigner, Graduate Student; Dr. Tom Kuhar, Entomology.*

Four stink monitoring traps were positioned around the DSF herb plot to evaluate stink bug activity in diversified community gardens.

**Eastern Organic Broccoli Variety Trial**

*Dr. Ron Morse, Horticulture.*

DSF personnel assisted with planting and maintenance; approximately 60 hours.

**Strip Tillage as a Climate Change Mitigation and Adaptation Tool for Vegetable Production.**

*Shaun Francis, Graduate Student; Dr. Megan O'Rourke, Horticulture.*

DSF personnel assisted with plot establishment and maintenance; approximately 200 hours.



Graduate student Shaun Francis, Horticulture.

## PUBLICITY AND PROJECT DISSEMINATION

### *2014 Popular print and internet publications:*

September 2014. Video: Kentland Farm Class. Virginia Tech University Relations.  
[http://www.unirel.vt.edu/audio\\_video/2014/09/091814-dining-kentland.html](http://www.unirel.vt.edu/audio_video/2014/09/091814-dining-kentland.html)

### *Professional Presentations:*

Carver, R. (2014). "Closing the Loop: Translating Local Food from the Farm to the Menu." Oral Presentation, Annual Conference of the Sustainable Agriculture Education Association, Raleigh, NC. August 4, 2014.

Hessler, A. (2014). "A Multi-stakeholder model for the development of an educational farm-to-campus program at Virginia Tech," Oral Presentation, Annual Conference of the Sustainable Agriculture Education Association, Raleigh, NC. August 4, 2014.

Hessler, A. (2014). "Dining Service Farm Tour: Integrated soil, crop, and pest management on a six-acre diversified vegetable farm," Field Tour, Annual Master Gardener College, Blacksburg, VA. June 26, 2014.

Hessler, A. (2014). "Sustainable Vegetable Production at the Dining Services Farm," Field Tour, Annual Virginia Nursery and Landscaping Association Field Day, Blacksburg, VA. August 14, 2014.

Hessler, A. (2014). "The Dining Services Farm: An Educational Farm-to-Campus Program at Virginia Tech. Oral Presentation, Virginia Tech University Libraries: Celebrating Extensions 100<sup>th</sup> Anniversary, Blacksburg, VA. September 10, 2014.



Tour of the DSF with the 2014 Master Gardener College.

## LESSONS LEARNED

### ***Organizational Structure:***

- A meeting of stakeholders from Dining Services and the Department of Horticulture was held to discuss strategies for cost recovery associated with the high tunnel constructed at the Urban Horticulture Center (see Appendix: 2013 Draft MOU: Horticulture Dining). The stakeholders agreed that establishing a formal committee to guide future decision-making related to activities at the Urban Horticulture Center was necessary.
- The summer DSF crew consisted of twelve Dining Services Employees. Twelve employees seemed to be the maximum number of employees needed. A work schedule of four days per week was established in summer 2014.
- The DSF grew its operations and educational programming significantly in 2014. The creation of an assistant farm manager position may be considered in the future.

### ***Student Involvement:***

- The Sustainable Agriculture Practicum class proved to be a successful learning experience for students and was critical to keeping up with farm tasks in the fall semester. Student enrollment in the course, however, will need to increase if farm production is to expand in the future.
- Weekend volunteer opportunities were attended by several hundred Virginia Tech Students in 2014. Facilitating volunteer opportunities during the school week would improve the integration of volunteers during normal farm work hours.

### ***Infrastructure:***

- The tool storage shed known as the “feedlot shed” was reorganized to include hanging tool racks, shelving, lockers, lunch tables, and chairs. This greatly increased the functionality of the space for storage, community use, and teaching. A hand-washing sink is still needed.
- The milk parlor was cleaned and reorganized for better equipment storage. It was determined to be poorly suited as a washing and packing shed, but may be utilized as a workshop space.
- A portion of the mechanic shop was converted into a washing and packing shed. This greatly increased the ability to maintain post-harvest quality of produce.
- A battery was stolen from a Dining Services Farm delivery van. The incident reinforced the need to implement tighter security measures for vehicles and buildings.



The expansion of washing and packing space allows for more efficient and food-safe produce handling.



### ***Production and Harvesting***

- The refurbishing and use of existing weed cultivation equipment at Kentland Farm greatly improved production efficiency and yield in 2014. Equipment included two Allis Chalmers G cultivating tractors, and a Williams Tool System cultivation implement.
- In previous years, tomatoes had been difficult to grow organically due to excessive disease pressure. This year, tomatoes were grown organically in the high tunnel and with conventional pesticides at the DSF, with significant improvement in fruit yield and quality.
- Deer pressure at Kentland farm resulted in crop losses of beets, chard, and carrots, with some damage to other crops. Strategies to exclude deer, including deterrents and fencing, were used to some extent. These and other strategies need to be intensified in future years.

### ***Produce Utilization***

- A “standing order system,” consisting of a scheduled delivery of a predetermined produce order to Dining Halls, was implemented in Fall 2014. This system increased the amount of produce used and greatly simplified the ordering system.
- Beginning in Fall 2014, a delivery truck from Southgate Food Processing Center picked up produce from the DSF every Thursday. This made it possible to deliver otherwise unwieldy pallet-loads of bulky produce items from the farm to campus.

### ***Outreach***

- The name “Dining Services Garden” was adapted to “Dining Services Farm” to reflect to expanding scale of production.
- There was agreement among stakeholders that the name “Dining Services Farm” should be changed to more accurately reflect the diversity of participants involved in and impacted by the program. A committee of stakeholders will be charged with developing a new name in 2015.
- A centralized website for the DSF needs to be developed.



The Dining Services summer farm crew.

## ONGOING GOALS AND PROGRESS

### ***USDA Organic Certification:***

The DSF has operated using organic management practices since its inception. We intend to apply for USDA Organic certification in 2015 to advance our mission of promoting organic farming practices and food consumption. Certified organic land will be made available to researchers seeking grant funding specific to organic farming systems.



### ***Implement Good Agriculture Practices (GAPS) Policies and Procedures:***

We are currently partnering with VT Fresh Produce Food Safety Coordinator Amber Valloton and VT Horticultural Extension Agent Kelli Scott to implement GAP policies and procedures in DSF production, harvest, and handling operations. This partnership will serve as a platform for education, research, and extension outreach around food safety. To address irrigation water quality concerns, the DSF partnered with Axiall Corporation, which donated and installed an Accu-Tab® irrigation chlorinator unit (\$4,150 value).

### ***Additional High Tunnels:***

The high tunnel built in 2014 has extended the growing season for fresh produce and provided hands-on educational opportunities for students at the Urban Horticulture Center. We intend to build additional tunnels at the DSF Kentland Farm location to expand off-season produce production. When electrical utilities and propane service is supplied to the high tunnel at the Urban Horticulture System, it will serve as the primary location for transplant propagation.

### ***Dining Services Farm Infrastructure:***

The support from management personnel at Kentland Farm has been instrumental to the growth and success of the DSF. In 2014, Kentland Farm personnel facilitated improvements in tool storage, community and teaching space, and produce washing capacity by sharing their facilities and contributing their time and expertise. The addition of a hand-washing sink, storage shelves, and lockable tool room are planned for 2015. Efforts to renew planning and fundraising for the construction of a new community building at Kentland Farm (see Appendix: 2012 Draft Business Plan: Kentland Community Farm) need to be addressed by a committee of stakeholders.

***Student and Faculty Research:***

In 2014, research projects were conducted by students and faculty from the Department of Horticulture and the Department of Entomology. We welcome participation from other departments in the future. The potential for undergraduate research experiences at the DSF has not yet been fully realized. A protocol for conducting undergraduate research at the farm, including space request, resource allocation, and advising, needs to be developed.

***Marketing Venues for DSF Produce:***

Educating and empowering students through the act of eating local, sustainably grown food is a central mission of the DSF. Serving the produce in dining halls extends this experience to students across the Virginia Tech campus. Other venues for distributing food grown by the DSF that have been considered include an on-campus farm stand and a Community Supported Agriculture (CSA) program. These venues may also provide an additional source of revenue to fund program development and hire staff. A committee of stakeholders must partner with university and community representatives to determine the feasibility of these options and their potential impact on the community.

## Appendix

### 2014 Expenses: Paid by Dining Services

#### Seed, Materials, and Supplies

Order Date	Vendor	Item	Description	Amount
1/28	Johnny's Selected Seeds	Seed	Onions and spring greens, Seed Order #1	\$132.15
2/18	Nourse Farms	Seed	Asparagus Crowns	\$142.45
3/1	Johnny's Selected Seeds	Seed	Seed Order #2	\$203.14
3/1	Harris Seeds	Seed	Seed Order	\$132.90
3/4	SeedWay	Seed	Seed Order	\$396.24
3/24	Johnny's Selected Seeds	Seed	Seed Order #3	\$40.25
4/11	Seven Springs Farm	Production Materials	Organic Fertilizer, Potting Media, Fish Emulsion, Inoculent, Potassium Sulfate	\$1,529.25
4/11	Wildseed Farms	Seed	Wildflower Seeds	\$99.25
4/14	Montcroft Farms	Seed	Potatoes	\$510.00
4/14	Berry Hill Irrigation	Supplies	Drip Tape, Layflat, Black & White Plastic, Twine	\$1,119.50
4/17	Gemplers	Supplies	Safety Equipment, etc.	\$568.15
4/18	PME Compost	Production Materials	Spring compost delivery	\$562.00
5/14	Seven Springs Farm	Production Materials	Organic Fertilizer, Cover Crop Seed	\$849.25
5/16	Uline	Supplies	Produce bags, rubber bands, stickers	
5/20	Jones Family Farms	Seed	Sweet Potato Slips	\$204.00
6/18	Clear Water Testing	Supplies	Water Testing	\$35.00
8/4	Johnny's Selected Seeds	Seed	Seed Order #4	\$211.20
8/4	Sanico	Supplies	Brooms	\$39.26
9/4	Berry Hill Irrigation	Supplies	Chlorine Tablets	\$665.50
9/12	Indiana Berry & Plant Company	Seed	Strawberry Plants	\$347.95
9/17	Seven Springs Farm	Production Materials	Fertilizer	\$337.00
9/25	groworganic.com	Seed	Garlic seed	\$719.50
11/3	Seven Springs Farm	Supplies	Row Cover 40- x 430'	\$740.00

#### Fuel

Use Period	Vendor	Item	Description	Amount
1/17-7/31	Foster Fuel	Gas	Chevy 1500, cultivating tractor,	\$702.35

4/4-7/23	Foster Fuel	Diesel	gas cans Tractor mowing, tillage, cultivation, lay plastic	\$281.25
8/30	Foster Fuel	Diesel	Tractor tillage, cultivation	\$66.87
9/5-9/19	Foster Fuel	Diesel	Tractor tillage, pesticide application	\$57.90
9/17	Foster Fuel	Gas	Chevy 1500	\$94.11
10/23-10/27	Foster Fuel	Diesel	Tractor mowing, tillage, lift plastic, cover crops	\$59.47
10/27	Foster Fuel	Gas	Chevy 1500	\$78.52

### High Tunnel Expenses

Date	Vendor	Item	Description	Amount
7/30	Puckett Greenhouses, LLC	30' x 96' high tunnel	57% cost of construction: materials and labor	\$10,061.02

### Total Expenses

Seed	\$3,139.03
Production Materials	\$3,277.50
Supplies	\$3,167.41
Fuel	\$1,340.47
High Tunnel	\$10,061.02
<b>Total All Expenses</b>	<b>\$20,985.43</b>

## 2014 Expenses: Paid by the Department of Horticulture

### Seed, Materials, and Supplies

Order Date	Vendor	Item	Description	Amount
6/4	Heaveners	Screws	Supplies	\$47.12
6/6	Heaveners	Screws	Supplies	\$10.51
6/14	Seventh Season	Watering Wand	Tools	\$24.71
6/16	Heaveners	Bolts	Supplies	\$15.84
6/27	Heaveners	Saw, Misc. carpentry supplies	Tools	\$202.68
6/28	Heaveners	Raft Angle Square	Tools	\$(16.99)
6/28	Heaveners	Drywall Square	Tools	\$23.59
6/27	Lowes	Swanson Speed Square	Tools	\$12.95
6/27	Southern States	Wire Tensioners/sleeves	Supplies	\$33.42
7/8	Heaveners	Drill Bit	Tools	\$7.26
7/9	Heaveners	Nuts/bolts	Supplies	\$14.68
7/12	Blacksburg Feed and Seed	Liquid Calcium	Production Materials	\$5.50
7/23	Heaveners	Hose, mouse trap, mineral oil	Supplies	\$70.37
7/23	VT Surplus	Whiteboard, desk, table lockers freezer, cabinet	Furniture	\$190.00
8/11	Gemplers	Sprayer part, mouse trap, notebook	Supplies	\$65.45
8/30	Mead Tractor	Allis Chalmers G Parts	Supplies	\$10.84
8/30	Blacksburg Auto Parts	Allis Chalmers G Parts	Supplies	\$5.69
9/5	Hose House Inc	Pipe fittings/O-rings	Supplies	\$16.99
9/5	Home Depot	Cleaning Supplies, fittings for wash tanks	Supplies	\$99.90
9/17	Home Depot	Fittings	Supplies	\$101.17
9/17	Home Depot	Refund for Tax Exempt Status	Supplies	\$(5.39)
9/17	Seven Springs Farm	Cover Crops	Seeds	\$272.35
9/20	Home Depot	Fittings	Supplies	\$37.30
9/20	Home Depot	Refund of Fittings	Supplies	\$(19.96)
9/22	Heaveners	Fittings	Supplies	\$44.93
9/24	VT Surplus	Drawers and Tables	Furniture	\$55.00
9/25	Grainger	Fittings for packing shed	Supplies	\$60.56
10/3	Home Depot	Tubing, Lock Hatch, weed wacker string	Supplies	\$15.36
10/3	Home Depot	Refund of Fittings	Supplies	\$(50.62)
10/30	Heaveners	Fittings	Supplies	\$8.15
10/30	Heaveners	Refund of Fittings	Supplies	\$(6.25)
11/7	Johnnys Selected Seed	Salad greens seed.	Seeds	\$12.35

### High Tunnel Expenses

Date	Vendor	Item	Description	Amount
7/30	Puckett Greenhouses, LLC	30' x 96' high tunnel	43% cost of construction: materials and labor	\$7,500.00

### Total Expenses

Seed	\$284.70
Production Materials	\$5.50
Supplies	\$576.06
Furniture	\$245.00
High Tunnel	\$7,500.00
<b>Total All Expenses</b>	<b>\$8,611.26</b>

## 2014 Harvest Totals and Market Value

Product	Actual Poundage Harvested	Market Value
Arugula	25.00	\$84.38
Asparagus	108.00	\$255.27
Beans, Green	1,088.00	\$725.33
Braising Mix	60.00	\$145.40
Broccoli	2,750.50	\$2,200.40
Carrots	107.00	\$47.08
Collards	940.00	\$574.44
Corn	1,595.00	\$478.50
Cucumbers	505.00	\$116.15
Eggplant	58.00	\$25.52
Gourds	660.00	\$858.00
Head Lettuce, Green Leaf	141.00	\$108.95
Head Lettuce, Romaine	136.00	\$99.73
Kale, Lacinato	405.00	\$247.37
Kale, Red Russian	354.00	\$216.22
Mixed Salad Greens	147.00	\$343.00
Mustard Greens	191.00	\$116.72
Peas	18.00	\$22.91
Pepper, Red Bell	262.00	\$296.93
Peppers, Green Bell	896.00	\$501.76
Peppers, Poblano	342.00	\$376.20
Potatoes, Kennebec	5,383.00	\$2,045.54
Potatoes, Salem	1,398.00	\$531.24
Pumpkins	3,699.00	\$508.61
Spinach	125.00	\$312.50
Sweet Potatoes, Large	3,675.00	\$1,837.50
Swiss Chard	100.00	\$133.33
Tomato, Roma	139.00	\$213.23
Tomato, Slicer	1,433.00	\$802.48
Tomato, Sungold	2,324.00	\$1,487.36
Turnips	100.00	\$44.00
Winter Squash, Acorn	1,551.00	\$664.71
Winter Squash, Butternut	2,954.00	\$1,266.00
Winter Squash, Carnival	155.00	\$66.43
Winter Squash, Cushaw/Hubbard	67.00	\$28.71
Apples	1,512.00	\$1,020.60
Blackberries	18.50	\$80.17
Peaches	1,594.00	\$1,434.60
Raspberries	4.00	\$24.00
Rhubarb	30.50	\$52.43
Watermelon	3,560.00	\$415.33



Basil, Genovese	235.00	\$1,762.50
Lemon Balm	6.00	\$63.00
Sage	5.00	\$52.50
<b>Total</b>	<b>40,856.50</b>	<b>\$22,687.06</b>

**MEMORANDUM OF UNDERSTANDING (MOU)**  
**BETWEEN**  
**VIRGINIA TECH DINING SERVICES**  
**AND**  
**VIRGINIA TECH DEPARTMENT OF HORTICULTURE**

**Background:**

Dining Services and the Horticulture Department (Horticulture) desire to expand our programming efforts to meet the increasing demand from our students to consume and learn more about sustainable organic foods and production systems. This program will not only support Dining Services customer demands for more local sustainable foods but will also support the Horticulture Department's sustainable initiative for student learning and community outreach. The University is taking active steps to increase the sustainability of operations, facilities, and other aspects of campus life. This would be a tremendous (highly visible) opportunity to integrate fresh healthy foods to our students and promote departmental teaching efforts, hands-on learning and positive community perception. Student-managed food production has been the model at many small colleges, but land grant institutions are now taking this concept to higher levels. Several of VT's peer institutions have already integrated organic and/or sustainable production and student learning.

**OBJECTIVE:**

Integrate the Department of Horticulture's education mission with Dining Service's sustainability initiative by utilizing horticulture students and sustainable horticultural methods for production of herbs, greens, and other produce, all while creating a dynamic student learning experience.

**PURPOSE:**

The purpose of this MOU is to formally outline the responsibilities of each party to this Agreement relevant to the design, construction, implementation and on-going usage of an herb and vegetable production/teaching facility to be located at the Urban Horticulture Center.

### **STATEMENT OF MUTUAL BENEFITS AND INTERESTS:**

The joint project will support the University's existing sustainability effort. The project will be an opportunity to integrate and promote departmental teaching efforts, hands-on learning, and positive community perception.

The goal is to produce commercial quality, locally grown, sustainably produced, and potentially organically produced pending certification, culinary herbs and vegetables to be utilized by Dining Services in conjunction with their Sustainable Dining Programs.

The Horticulture Department will benefit from expanding their programming efforts to meet increasing demand for education and experiences related to sustainable and organic production systems. This program would not only help support Horticulture's environmental horticulture major, but also include student learning and community outreach. Hands-on experience is in demand by both students and their future employers. The public relations aspect of the project would also be invaluable in Horticulture's attempt to expand undergraduate enrollment. More than half of their students are transfers from within the university and this is an excellent opportunity to increase those numbers. Publicity will be garnered both on the project as a whole and at the point of purchase of products with "Grown by the Department of Horticulture" label. This effort would also involve three of the College of Agriculture and Life Sciences six key initiatives including agricultural and environmental sustainability; food, nutrition, and health; and the development of high-value horticulture products and markets.

### **AGREEMENTS:**

Virginia Tech Dining Services and Department of Horticulture understand and agree to the following:

### **DINING SERVICES SHALL:**

- 1) Fund the initial start-up costs as budget allows associated with the construction of a controlled environment greenhouse for cold-weather production and seed-starting/propagation year round, a high tunnel/cold frame for cool season and summer production and a separate potting/storage/packing space with a cooler.
- 2) Be responsible for transportation of the products to their facilities.

- 3) Split fund one position, instructor level, titled "Sustainable Food Production Director," housed in the Department of Horticulture, to oversee production, manage student workers, coordinate receipt of orders, and packaging and shipping of the produce. (See description – Appendix 1)
- 4) Provide 10-15 salaried staff workers for up to 40 hours a week from Mid May – Mid August.
- 5) Fund Seed costs for produce grown at the Urban Horticulture Center that will be used by Virginia Tech Dining Services.

**DEPARTMENT OF HORTICULTURE SHALL:**

- 1) Provide the land for a green house and garden space; initially at the Urban Horticulture Center (UHC) (Prices Fork Rd.)
- 2) Provide the faculty and staff expertise/oversight of the greenhouse and high tunnel procurement, construction, and production by designating the Sustainable Food Production Director as the lead procurer of external funds for this project.
- 3) Provide supplemental on-site staff support to include UHC manager and other horticulture technicians.
- 4) Create courses, internships, work-study opportunities, etc. to get students involved in the effort at little to no cost to Dining Services.
- 5) Collaborate with faculty from other departments such as Human Nutrition, Foods and Exercise (HNFE), Food Science and Technology (FST), and Department of Crop and Soil Environmental Sciences (CSES) to maximize visibility to students and utilization of resources.
- 6) Supervise instructor position with cooperation/input of Dining Services.
- 7) Split fund one position, instructor level, titled "Sustainable Food Production Director," housed in the Department of Horticulture, to oversee production, manage student workers, coordinate receipt of orders, and packaging and shipping of the produce. (See description – Appendix 1)

**CROPS TO BE GROWN at the Urban Horticulture Center:**

- 1) Salad mix (lettuces and other greens) year 'round.
- 2) Herbs such as basil, dill, parsley, cilantro, etc. year 'round (smaller quantities November through May).

- 3) Larger quantities of leafy herbs such as basil and parsley in warmer months; can be flash-frozen for winter use.
- 4) Potential for other vegetable crops once program is established, as mutually agreed upon by both parties.

Appendix: **POTENTIAL EXPENDITURES:**

Growing structures – quotes from Griffin Greenhouse & Nursery. Both structures are the Windjammer Series 5000, 14' at peak, from Golden Pacific/Rough Brothers. These are institutional-quality structures designed for longevity and safety.

Greenhouse 1 – environmentally controlled for year-round production and propagation (ground beds, bench-top, hydroponic, etc.)  
- 30' x 96' (2880 sq ft) with structural upgrade (W-Truss), polycarbonate end walls, double poly-film skin, Siebring waste-oil furnace, exhaust fans, horizontal air flow (HAF) fans, evaporative pad cooling system, propagation system (heated mist bench), Wadsworth 6-stage environmental control system, benches, rolling doors

\$36,944

Estimated installation (external contractor): \$17,000-\$20,000 not including site prep, foundation, wiring, plumbing, etc.

Greenhouse 2 – outfitted as a minimally controlled environment for in-ground production of greens, herbs, etc. – much sturdier than a “high tunnel” and could be easily adapted to year-round production.

- 30' x 96' (2880 sq ft), polycarbonate end walls, double poly-film skin, two large sliding doors (tractor access), HAF fans, Midine Effinity 93 high efficiency unit heater, single stage thermostat, roll-up sidewalls for ventilation.

\$16,983

Estimated installation (external contractor): \$11,000-\$13,000 not including site prep, foundation, wiring, plumbing, etc.

Site prep including grading and utilities for both houses: estimate \$10,000, if project is routed through VT Facilities, costs may increase significantly.

**Estimated total for both growing structures plus site prep and installation:  
\$91,927**

**TERM:**

1. The term of the MOU shall begin on July 1, 2013 and shall extend through July 1, 2018.
2. **It should be noted that this is not an arrangement for Horticulture to sell produce to Dining Services, but an exchange of resources to meet the goals of both units.** At such time that Horticulture can absorb the technical staff position and production costs and/or production expands to additional venues and/or additional products, this MOA would be subject to renegotiation.

**SIGNATURES:**

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Designee  
Dining Services

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Dr. Roger Harris  
Head, Department of Horticulture

*→ Include language on need to get "out" ~~12~~*  
*• Review annually*  
*• Can only be terminated w/ 12 month notice*

## Appendix 1

### Position description – to be posted by July 1

#### **Sustainable Food Systems Production Director**

The Department of Horticulture within the College of Agriculture and Life Sciences (CALs), and Virginia Tech Dining Services have partnered since 2008 to grow produce that is directly sourced to the university's dining halls. The Department of Horticulture's emphasis on small-scale sustainable and organic food production systems in partnership with Dining Services is seeking someone with outstanding farming, leadership, and management skills to guide the development of the 6 acre Kentland Farm Dining Garden (fruit and vegetable production) and the management of controlled environmental production (hoop house and greenhouse production) at the Urban Horticulture Center, as well as teach classes within the Department of Horticulture focused on sustainable and/or organic food production methods. The successful candidate will also participate in collaborative team teaching in the interdisciplinary Civic Agriculture and Food Systems (CAFS) minor within CALS and serve as a community partner.

#### ***Required Qualifications***

- Earned Masters in Horticulture or an agriculture-related field.
- Demonstrate teaching expertise in higher education with knowledge of conventional and sustainable and/or organic food production methods;
- Effective organizational and communication skills
- Experience in sustainable or organic food production and farm-to-table evaluation.

#### ***Preferred Qualifications***

- PhD in Horticulture or an agriculture-related field
- Experience in grant writing
- Success in securing extramural research and or program funding
- Excellent interpersonal skills that facilitate working with a variety of audiences including faculty, staff, students, administrators, and the general public.

•  
For a more detailed description of the position, go to [www.hort.vt.edu](http://www.hort.vt.edu)

**ADVISORY Planning Team**

Dwight Paulette, Kentland Farm Director  
 Jon Wooge, Kentland Farm Manager  
 Ron Morse, CAFS Kentland Farm Education Coordinator  
 Susan Clark, HNFE and Civic Agriculture and Food Systems Minor  
 Johanna Cricenti, Kentland Farm Assistant and Graduate Student HORT  
 Elena Dulys, VT Dining Sustainability Coordinator  
 Steve Hodges, CSES  
 Thomas Kuhar, ENT  
 CALS Department Head Representatives: Roger Harris, HORT and Luke T. Kok, ENT

**SUMMARY**

- Site selection for KCFVT building structure to support ongoing and future teaching, research and outreach programs adjacent to current VT Dining Services Garden and HORT organic production research plots.
- Structure proposals, design and construction to be conducted in collaboration with College of Architecture & Urban Studies (CAUS) faculty and students throughout the 2012-13 academic year.
- Value of produce generated to VT Dining Centers
  - Cumulative: 31,696 (2010) + 38,260 (2011) + 3,000 (2009 estimate) = \$72,956
  - Projection with 3 acres w/ better management, better weather: \$50,000
- USDA Higher Education Grant remaining salary support until 10/2012: \$25,226.33
- External funding streams for curriculum and research: NIFA-AFRI USDA HEC, SARE, Appalachian Rural Development, Organic Agriculture Research and Extension Initiative, Organic Transition Program
- Proposed 3,000-4,500 sq.ft. structure costs at \$250,000 - \$300,000.
  - Estimated value at \$400,000 - \$500,000.
- VT Dining Financial Investment: VT Dining Services garden expenditures \$19,400 - input and supplies \$54,000 - labor to date; in-kind equipment 50,000; total investment 123,400.00.

**Timeline:** Approval for the CAUS project is required by VT Board of Visitors (BOV) (spring 2012). Campus Planning Architect, Hugh Latimer has agreed to get CAUS project on the BOV agenda.

**BACKGROUND**

Food Security has become a major issue in the 21<sup>st</sup> century. Consumption of locally-grown food is a worldwide movement. June 1, 2009, driven by high fuel costs and economic uncertainties, the Board of Visitors approved the Virginia Tech Climate and Action Commitment and Sustainability Plan (VTCAC&SP). Our proposed *Kentland Community Farm at Virginia Tech (KCFVT)* supports the on-campus VTCAC&SP initiative, the College of Agriculture and Life Sciences (CALS) minor in Civic Agriculture and Food Systems (CAFS), and extends its reach to the Kentland Farm off-campus facility and to the broader VT community at large. It also aligns with the universities scholarship domains of learning, discovery, and engagement.

The KCFVT is a strategy to facilitate collaboration across various colleges, departments and auxiliary service units to foster local/regional agriculture and food system security, and a culture of ecological practice at Virginia Tech. In this plan, a 50-acre portion of the Kentland Farm would become an "experiential laboratory" to produce high-quality crops, high-quality vegetables, and fruits for VT Dining Services, promote hands-on experiential learning opportunities for VT students, and serve as a site to conduct and showcase sustainable research and community outreach projects.

**PARTNERSHIPS AND SUPPORT**

The Dining Services Garden at Kentland Farm is a cornerstone of the Kentland Community Farm (KCF) vision. This project is one of VT Dining Services' local sources for vegetables, fruits and herbs. The garden is staffed by students and dining workers, who sow, tend, harvest and then prepare and serve the vegetables produced and the soils are nourished with compost from the dining centers new composting program. Started in 2009 with a simple herb plot, the garden grew to a small scale organic vegetable farm of 1.5 managed acres in 2010 which doubled to 3 acres in 2011. The garden is both a place for both education and food production—all of the produce ends up at Farms & Fields or other dining centers across campus.

The human resources to run the garden are diverse. We have also partnered with nearly a dozen student groups on campus including:

- University Honors
- Theta Tau and Circle K International Fraternities
- Environmental Coalition
- Sustainable FoodCorps.

The garden has also been an active host for the Governor's School of Agriculture Summer Sessions and Master Gardener Extension Education Field Days. There is ongoing support and for this effort from the CALS Minor in Civic Agriculture and Food Systems and assistance from faculty and staff of the Department of Horticulture and the Kentland College Farm.

**GOALS AND OBJECTIVES**

The overarching goal of the KCFVT is to promote open space that supports collaborative, multidisciplinary opportunities to conduct research, teach experientially, and participate in community outreach on civic agriculture and food systems. The KCF will engage students in opportunities for experiential education with faculty including translational research on topics related to civic agriculture and food systems; implement multi-disciplinary farm projects that would build capacity at KCFVT that fosters local/regional agriculture and food systems throughout the Virginia Tech community (students, faculty, Kentland Farm staff, and local citizens and farmers). Specific objectives include:

1. Develop both short- and long-term plans to utilize a 50-acre site at the Kentland Farm. Various VT faculty and students would combine their efforts and skills to develop these plans.
2. Renovate existing buildings and build new facilities and infrastructure at the Kentland Farm. Examples of new buildings and facilities include:
  - a. Main Building Complex, containing equipment bays and repair shop; washing, handling and short-term storage facilities for VT Dining Services; classroom-laboratory space and large meeting room; kitchen and bathroom facilities.
  - b. Outdoor pavilion and meeting facility.
  - c. Well-designed gardens and farmscapes.
  - d. Long-term research plots and short-term plots available to undergraduate students.
3. Assign permanent state-funded faculty and staff positions to manage all aspects.
4. Collaborate with existing Kentland Farm staff and facilities—to enhance research, teaching and outreach.
5. Incorporate KCFVT across curricula (HORT, CSES, ENT), and the College's Civic Agriculture and Food Systems Minor that integrates interdisciplinary, experiential learning opportunities including student research.
6. Host cutting-edge research demonstrations for faculty, students and interested community partners.
7. Coordinate with Center for Student Engagement and Community Partnership to elicit student volunteers to KCFVT in keeping with UT Prosim.



**CAPITAL INVESTMENT**

To best meet the KFCVT goals and objectives we are seeking funding and approval for a new building complex as stated in **Objective 2** above. An innovative interdisciplinary partnership has been formed with the College of Architecture and Urban Studies to bring the undergraduate third year studio design-build lab into the development and construction process of the new facility at Kentland. In 2010, the CAUS students contracted with the Town of Covington to create a Farmers' Market structure for the community. The Covington project serves as a good model for a multi-purpose structure housing office/meeting space, restroom/wash facilities, open air processing/gathering space which we use as a schematic for the proposed Kentland Facility. The proposed site for this building is adjacent to the organically managed horticultural research and Dining Service Garden plots illustrated as Knew 7 in Appendix B.

Currently, new buildings at the Kentland College Farm facility are costing approximately \$100/sq. ft. The new facility would be a structure of 3,000 – 4,500 sq. ft. with a proposed budget for the new structure at \$250,000 – \$350,000. In utilizing resources such as equipment and labor housed at Kentland, expertise and services provided by the CAUS program, support and donations provided by VT Dining Services we aim to have an added value end-product and considerable cost savings (**Table 1**).

**Table 1: Cost Savings**

Savings value	Savings type	Reason for savings
\$15,000	General contractor	College of Architecture & Urban Studies (CAUS) serves as general contractor
\$20,000	Architect fees	CAUS serves as architect
\$50,000-100,000	Labor costs	CAUS students provide labor
\$25,000-50,000	Labor materials	Building materials go up for bid rather than purchased through contractor
\$10,000	Building site prep	Kentland College Farm performs service
\$1,500	Water and electrical hookups	Kentland College Farm performs service
\$1,000	Sediment and erosion control	Kentland College Farm performs service
\$50,000	Food processing equipment	Provided by Virginia Tech Dining Services free of charge

Total Savings: \$150,000 – \$250,000      Proposed Building Costs \$250,000 – \$300,000  
 [Estimated Building Value: \$400,000 - \$500,000]

**CURRENT OPERATIONS**

Currently 15-18 acres of the proposed KCFVT site are already in use by HORT, VT Dining Services, ENT, CAFS Minor, and other CALS partners. The Kentland College Farm land, equipment and human resources synergistically support the building concept and agree it would enhance programs, research, services, and facilities. Current and future production, research and extension programs will utilize the proposed facility. As proposed in **Objective 3**, permanent staff and faculty positions allocations are anticipated as the size and scope of the KCF grows and grant funding cycles end. **Table 2** outlines positions and funding streams excluding the Kentland Farm staff.

**Table 2: Staff Positions and Funding Source**

Position	Department/Funding source	Annual cost
Farm Education Coordinator	CAFS Minor/USDA/HFC grant-funded	\$40,000
Farm Education Assistant/Technician	Department of Horticulture grant-funded	\$15,000
Garden Outreach & Education Coordinator and Farm Operations Manager	Dining Services/Dining Services	\$40,000
Farm Workers	Dining Services/Dining Services	\$14,000
Student Volunteers	Various – approx 200 per season	1000 hours

The Dining Services garden provides between 25,000 and 40,000 pounds of produce to the dining centers seasonally. As a collaborative partner in the KCFVT, Dining Services fulfills its guiding principle of sustainability while **remaining revenue neutral**. The goal of the project is to provide a high quality, internally sourced product and to meet a triple bottom line (**Table 3**).

**Table 3: 2012 Dining Services Garden Income vs. Expense**

2012 Projections	Income	Expense
Vegetables	\$54,000.00	Supplies \$12,000.00
Fruit	\$10,000.00	Labor \$54,000.00
Herbs	\$5,000.00	
<b>Total</b>	<b>\$69,000.00</b>	<b>Total \$66,000.00</b>
<b>(Based on 2010 –11 aggregation)</b>		<b>NET \$3,000.00</b>

**PROJECTED OUTCOMES**

Achievement of the goal and objectives of the Kentland Community Farm at Virginia Tech will:

**1. Enhance experiential learning, teaching, and outreach.**

The projected new building at Kentland includes needed rest rooms, class rooms, laboratories and large-scale meeting facilities that would vastly improve teaching and outreach capabilities. The facility provides greater potential for project-based learning for students in the CAFS minor and those in the proposed Student Living Learning Community involving best practices in civic agriculture and food systems.

**2. Improve and generate new research programs.**

Although various projects in conservation agriculture and organic systems have been conducted at the Kentland Farm over the past 15 years, the proposed new facility would vastly improve the capacity to attract research funding and in turn, top-notch faculty and graduate students to enhance ongoing KCF interdisciplinary programs.

**3. Produce crops and vegetable and fruit for VT Dining Services.**

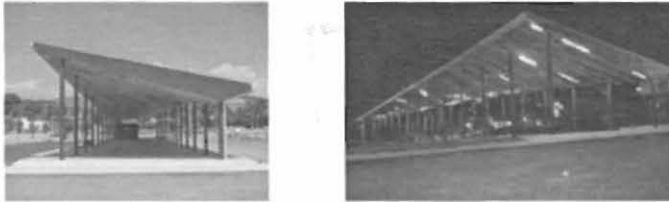
The proposed new building complex at Kentland would allow more efficient and effective washing, handling and short-term storage of vegetables and fruit. Additional acreage could be devoted to producing high-quality food commodities at the Kentland Farm in future seasons.

**4. Enable and facilitate community educational, professional and social events.**

Both the short and long-term plans of the KCFVT include establishment and maintenance of architectural structures and landscape gardens that could host such events as weddings, faculty retreats, and professional and producer meetings.

The Kentland Community Farm Project aligns with the university's tripartite mission while providing valuable benefits to the university and regional communities. The KCFVT will work closely with faculty across disciplines in curricula incorporation, serve as a space for research and discovery, and engage the community through service learning. Additionally, the KCFVT can continue to provide Dining Services with high yields of healthy fresh, local food for student consumption. Finally, the KCFVT addresses the VTAC&SP Commitment Resolution Commission on University Support Resolution 2008-2009C item 13: 13. The university will create and support a virtual Virginia Tech School of Sustainability or similar mechanism to coordinate, develop, and communicate related instructional, research, and outreach academic programs.

CAUS Design Examples: Town of Covington Farmers' Market



Example: University of Kentucky Student Farm Building  
2005



Appendix D: VT Dining Services Garden Investment to Date

Annual Inputs	
Seed & Plants	\$5,200
Fertilizers	\$4,000
Compost	\$1,150
Fuel	\$1,600
Hardgoods Inventory	
Tools & Equipment	\$5,300
Packaging Harvest Containers	\$250
Vehicle Repair and Maintenance	\$500
Well Repair	\$1,500
Wash Area	\$500
	<b>\$19,400</b>

Appendix E: VT Dining Services Equipment Donations (Proposed)

Shultz Hall	HOBART	REFRIGERATOR	28-SEP-1999	4,242.00	05-APR-2010
Shultz Hall	HOBART	FREEZER	28-SEP-1999	3,669.00	08-APR-2010
Shultz Hall	NA	BACK COUNTER W/SINK CUSTOM FABRICATED, STAINLESS STEEL	28-SEP-1999	2,556.00	08-APR-2010
Shultz Hall	SUPERMARKET MERCHANDISING	BAGEL BIN	28-SEP-1999	2,040.00	22-APR-2010
Shultz Hall	YALE	HANDTRUCK PALLET W/4000 LB CAP	12-NOV-1992	3,394.00	08-APR-2010
Shultz Hall	Hajoca	Lockers, 12 x 12 x 37 w/54 Openings, 1 Tier,	01-AUG-2002	4,788.00	06-JAN-2006
Shultz Hall	HOBART	DRINK COOLER	11-AUG-1999	2,389.00	05-APR-2010
Shultz Hall	HOBART	DRINK COOLER	11-AUG-1999	2,389.00	08-APR-2010
Shultz Hall	MAGIKITH	CHARBOILER, NATURAL GAS FLOOR MODEL	19-JUN-1995	4,275.00	08-APR-2010
Shultz Hall	LANG	GRILL TOP WITHOUT OVEN	19-JUN-1995	2,404.00	08-APR-2010
Shultz Hall	SCOTSMAN	ICE-CUBER W/BIN	28-SEP-1999	5,060.00	
Shultz Hall	SCOTSMAN	ICE MAKER W/BIN	26-JUL-1995	2,068.00	
Shultz Hall	FOLLETT	Ice Storage Bin Follett Double Door Upright Bin	22-SEP-2004	4,154.03	08-APR-2010
Shultz Hall	HOBART	QUICK CHILLER ROLL UNIT WITH REMOTE CONDENSING UNIT	12-AUG-1999	16,489.00	08-APR-2010
Shultz Hall	HOBART	ROLL-IN REFRIGERATOR	28-SEP-1999	3,155.00	08-APR-2010
Shultz Hall	WINSTON INDUSTRIES	HEATED CABINET	28-SEP-1999	3,545.00	08-APR-2010
				<b>66,617.03</b>	