

**2015 SACUBO BEST PRACTICES ENTRY:**

**Becoming 100% Compostable: Turning Food Waste into a Valuable Compost Resource for the UGA Campus**

**Jeanne J. Fry**

Executive Director of Food Services  
The University of Georgia  
Athens, Georgia 30602

**Bryan Varin**

Associate Director of Food Services  
The University of Georgia  
Athens, Georgia 30602

**Kevin Kirsche**

Director of Sustainability  
The University of Georgia  
Athens, Georgia 30602

**Allison Harper**

Public Relations Coordinator - Food Services  
The University of Georgia  
Athens, Georgia 30602



## **Abstract**

*With a Food Service operation that serves approximately 20,000 meals per day to nearly 8,700 meal plan customers in multiple large-scale dining facilities, the opportunity to make an impact on environmental sustainability is significant. UGA Food Services is no stranger to implementing sustainable procedures and has practiced a number of sustainable initiatives for decades. However, there was room for improvement and Food Services recognized the pulper system as one area where the division could achieve increased usage so as to improve efficiency, effectiveness, and the overall sustainable impact made on campus.*

*Many sustainable initiatives require the customer to take action. For example, customers are often asked by some restaurants to sort trash into bins designated for compostable or non-compostable items. UGA Food Services wanted to ensure customers were in no way burdened by the improvements being made to sustainable practices. With all items in the dining commons being 100% compostable, everything can be taken care of by the staff. Customers place their plates on a conveyor belt that travels back to the kitchen. Returned plates are scraped by kitchen staff and all organic materials are placed into a pulper that extracts extra water and grinds materials into a pulp substance. This organic material is collected in a 64-gallon roll cart which is transported from the dining commons to the on-campus composting facility. The compost is then reused in certain soil projects on UGA's campus.*

*Collaboration with the Office of Sustainability, the Facilities Management Division, and the Bioconversion Center, allowed Food Services to effectively plan and implement 100% composting in all of its dining commons. Food Services identified non-compostable items in the dining commons that needed to be converted to a compostable option. The division replaced condiment packets with bulk condiment dispensers, individual coffee creamers with refrigerated dispenser machines, plastic straws with paper straws, and plastic tea bags with silk tea bags. The Associate Director of Meal Plan Operations worked with the Purchasing Manager to identify replacement products that were affordable, appealing, and beneficial to our customers*

*Since converting to compostable items at the end of March 2014, an estimated 10,000 pounds of organic materials have been sent to UGA's bioconversion center from the UGA dining commons each week. The new practice has eliminated what was going to the landfills and provided campus with a new compost resource. As an added benefit to the division, cost savings are also anticipated. The conversion of condiment packets to bulk dispensers is estimated to result in savings of \$18,000 annually and the reduction in trash removal is estimated to yield \$10,000 of savings per year. The benefits of implementing this project also include teaching and learning opportunities, operational efficiencies for the campus, and positive outcomes in the local community.*

## **Introduction of the Organization**

The University of Georgia (UGA), established in 1785 as the nation's first state-chartered university, is the flagship institution among the 31 colleges and universities in the University System of Georgia. With just over 35,000 students, approximately 10,000 faculty and staff and an annual budget of \$1.4 billion, UGA is the largest and most comprehensive educational institution in Georgia and a driving force in the state's economic growth.

The University of Georgia's academic reputation is on the rise, and admission is increasingly competitive. Approximately 20,900 applicants applied for the Fall 2014 class of just over 5,200 freshmen. The University of Georgia is ranked 20<sup>th</sup> among the nation's top public universities by *U.S. News & World Report*, and the institution is consistently recognized as one of the best values in American higher education. Seventeen colleges and schools, along with auxiliary divisions, conduct the University's tripartite mission of teaching, research and service.

Nearly 1,800 employees (full-time, part-time and student workers) serve in the University of Georgia Food Services, striving to provide the essential support required by the University of Georgia to achieve its overall mission. UGA Food Services is the largest food service program in the Southeast, serving approximately 30,000 meals per day. Under its auspices are five dining commons, four food courts, eight campus eateries and a catering department, as well as maintenance, central food storage, IT, marketing, training and business offices. Effective communication with nearly 8,700 customers who voluntarily sign up for UGA's meal plan program is essential to the success of the organization.

## **Statement/Restatement of the Problem/Initiative**

On any campus, great opportunity to reduce the university's environmental footprint can be found in the dining program. UGA Food Services has long been committed to implementing

sustainable practices, while minimizing the effect these new initiatives have on customer service. Keeping almost 8,700 meal plan customers happy while serving approximately 20,000 meals in the dining commons each day is top priority, but UGA Food Services also recognized a great opportunity and responsibility to significantly impact environmental sustainability.

For many years, the sustainable practices implemented throughout the operations included: reducing energy and water usage by installing timers on lighting, specifying energy efficient replacement equipment, installing hand dryers in restrooms, and using a pulper system to extract water which reduces the volume of food waste and recycles water for use in dish rooms. Reusing resources is accomplished by using permanent dishes, glassware, and flatware. Contributions of prepared food that goes unused in the dining commons are accepted by organizations like Full Plate that distribute prepared food to local charities, shelters, and food pantries. Recycling practices are implemented with regards to office supplies, cardboard, glass, plastics, and metal cans. Cooking oils and ink and toner cartridges are also remitted for recycling.

Even with a multitude of sustainable practices in place, opportunities still existed for improvement to efficiency and effectiveness and the overall sustainable impact made on campus. One area of opportunity the division recognized was to increase utilization of the pulper system to full capacity.

In the mid-90s, UGA Food Services installed their first pulper system. The reason for a pulper is to extract water from food waste so that the volume of waste going to the landfills and/or water treatment facilities is significantly reduced. Implementing use of the pulper was a great accomplishment, but food waste was still being sent to landfills and/or water treatment facilities. The problem lay in the fact that non-compostable items such as condiment packets, straws, and tea bags were mixed in with the pulp and could not be accepted for compost by

UGA's Bioconversion Center. In 2014, the division decided to take the next step and completely eliminate non-compostable items from the dining commons. A goal was set to remove these items by April 1, 2014 and the team began working diligently to find solutions.

## **Design**

Before UGA Food Services implements any sustainable initiative, the effects that the new program will have on customer service is always examined. Food Services wanted to make sure their customers were not inconvenienced by having to sort trash into designated bins. Through careful design, not only was Food Services able to make the dining commons 100% compostable, but a high standard of customer service continued. The composting program starts in the kitchen of each UGA dining commons. After students and guests enjoy their meals, they place their plates on a conveyor belt that travels back to the kitchen. Returned plates are scraped by kitchen staff and all organic materials are placed into a pulper to extract extra water and grind materials into a substance that looks a lot like coleslaw. This organic material goes through a chute in the back of the building and lands in a 64-gallon roll cart. Each dining commons may generate 4-8 roll carts of organic material per day.

The next step in the process is collection and transportation of the organic materials from the dining commons to the composting facility on the southern edge of campus. The Services Department within the Facilities Management Division (FMD) created a dedicated compost collection route to pick-up the roll carts, empty them into a rear-load truck and transport them to the Bioconversion compost facility. The food residuals are dumped onto a concrete slab and quickly incorporated into the compost "windrows" or long linear compost piles by the compost facility manager.

The FMD Grounds Department manages the compost operation to create valuable soil amendments from organic “waste”. From start to finish the composting process takes more than six months and the result is like “black gold”, a nutrient-rich compost that is the envy of farmers and gardens in the region. The compost is used to restore soils on UGA’s campus including UGArden Teaching and Learning Farm and campus community garden. Fresh, sustainably grown produce from UGArden is used by the UGA Campus Kitchen program to create healthy meals for community members in need through the Athens Area Council on Aging Grandparents Raising Grandchildren program.

### **Implementation**

To implement the new products and composting practices, UGA Food Services collaborated with the Office of Sustainability, the Facilities Management Division, and the Bioconversion Center to identify compost acceptance standards and transport logistics. The Executive Director of Food Services provided vision and leadership for the project. She set the stage, collaborated with other on-campus departments, and met regularly with various constituents to ensure the goal was achieved. Food Services also identified items in the dining commons that were not compostable and found replacement items that were compostable. The division replaced condiment packets with bulk condiment dispensers, individual coffee creamers with refrigerated dispenser machines, plastic straws with paper straws, and plastic tea bags with silk tea bags. Though this may seem like an easy solution, the team worked diligently to identify products that were affordable, appealing, and beneficial to their customers. The Associate Director of Meal Plan Operations worked with the Purchasing Manager to identify which items needed to be eliminated and find replacement products.

Overall, 20 non-compostable condiment products were replaced with compostable solutions. Below is a complete list of the condiment items converted to compostable products:

- Individual margarine packets
- Single creamers
- Individual honey packets
- Individual cream cheese packets
- Individual mayonnaise packets
- Individual ketchup packets
- Foil-wrapped butter
- Individual pickle relish packets
- Individual creamers
- Individual fat-free cream cheese
- Individual fat-free mayonnaise
- Individual sugar-free Smuckers syrup
- Individual table syrup packets
- Saltine cracker packets
- Club cracker packets
- Townhouse cracker packets
- Wheat cracker packets
- Oyster cracker packets



*Bulk condiment pumps that replaced individual packets.*

Before starting the program, UGA ran small pilots to determine which services within the Facilities Management Division would be able to modify ongoing waste collection systems in order to transport the compost to the Bioconversion Center. UGA then ran a pilot to determine if

the grounds department who managed the compost facility could incorporate the materials into their current system. The pilot tested unknowns such as logistics, overall success of material usage, the receiving and redistribution processes, and unforeseen challenges.

After items were replaced, the entire Food Service team stepped in to see the project through every step of the way. Managers ensured the new products were served properly and the staff continues to oversee the proper dish room procedures necessary to pulp food waste.

The team not only accomplished their goals, but they did so one day early and by March 31, 2014, all of UGA's dining commons were 100% compostable. All this occurred while keeping thousands of students well-fed throughout the year. With a staff of nearly 1,800 students and full-time employees combined, it was essential that everyone work as a team to accomplish a goal such as this while maintaining the division's high standard of customer service.

### **Benefits**

Since converting to compostable items, 100% of the food waste from the dining commons has been pulped and sent to UGA's Bioconversion Center where it is combined with landscape "leaf and limb" debris and animal bedding from the UGA campus. Overall, UGA composts approximately 78 tons of leaf, limb, animal bedding and food residuals each month including approximately 10,000 pounds of organic materials per week from the UGA dining commons. Not only is this great because it eliminates what was going to the landfills and provides campus with a compost resource, but it also results in significant cost savings. It is estimated that the conversion of condiment packets to bulk dispensers will result in savings of \$18,000 annually. UGA Food Services has been able to measure the reduction of non-compostable items that resulted from this conversion. The chart below shows the reduced usage from the program's start date through the end of September 2014 as compared to the same months in 2013:



**Reduced Usage of Non-Compostable Products**  
**March 31, 2014 – September 30, 2014 compared to**  
**March 31, 2013 – September 30, 2013**

<b>Non-Compostable Product</b>	<b>Reduced Usage/Unit</b>
Shelf Stable Creamer	27,720
Perishable Creamers	72,000
Pickle Relish	1,000
Saltine Crackers	11,500
Dijon Mustard Packets	6,800
Wheat Crackers	12,000
Club Crackers	23,000
Oyster Crackers	3,000
Sugar Free Syrup	10,600
Fat Free Mayonnaise	15,000
Regular Mayonnaise	25,200
Yellow Mustard	67,000
Margarine Cups	31,500
Individual Butters	31,868
Honey Packets	29,000
Fat Free Cream Cheese	8,900
Regular Cream Cheese	15,900
Ketchup Packets	733,000
Table Syrup	65,100
Straws	340,000
Tea Bags	34,764
<b>Total Products</b>	<b>1,564,852</b>

Likewise, the division should see an estimated \$10,000 of savings per year as a result of the reduction in trash removal transport. The transportation changes also reduce the emissions released into the environment with waste being transported approximately 3 miles away from the facilities rather than 15 miles.

The domino effect of the benefits that come from eliminating all non-compostable items from the dining commons is amazing. The campus is seeing an improvement in efficiency and effectiveness as the cost and logistics of off-campus trash transport has been reduced and the Bioconversion Center now has a large-scale on-campus compost resource. This compost then benefits many on-campus landscaping projects and other initiatives that once had to look elsewhere for compost. Purchasing has become more efficient from the cost savings previously stated. Food Services experiences enhanced efficiency simply because everything in the dining commons is 100% compostable so there is no additional labor involved in the dish room to maintain this sustainable practice. Customers enjoy a great dining experience and do not have to worry about any extra steps when it comes to composting or sorting trash. Finally, the composting program provides teaching and learning opportunities for UGA students, operational efficiencies for the campus, and positive outcomes in the local community.



*Leaf and limb material being moved at the UGA Bioconversion Center*



*A bird's eye view of the UGA Bioconversion Center.*

Another positive result is the awareness that the project has created about how sustainability initiatives in an operation like Food Services can have a substantial impact. Many people learned of this collaborative effort after Food Services Executive Director, Jeanne Fry was recognized as sustainability champion for her dedication to creating a more sustainable UGA. The Sustainable UGA Award winners were recognized by their peers in the UGA community for going above and beyond to demonstrate dedicated efforts to conserve natural resources, advance sustainability initiatives and improve quality of life, both on and off-campus. Jeanne's recognition shows that implementing a large scale composting project is feasible and successful when multiple departments on campus work cohesively toward a common goal.

### **Retrospect**

UGA Food Services undoubtedly would plan and implement this project again. The program has been very successful and has already made a significant impact on the campus. If other universities are considering implementing a program such as this, Food Services' advice is to establish a timeframe that allows adequate time to incrementally convert products from non-compostable to compostable. For instance, start first by changing individual condiment packets to bulk condiment pumps. While that conversion is taking place, begin identifying other products which need to be replaced and then continue the process. It is also necessary to allow enough time to communicate changes to customers so they are prepared to see modifications in dining facilities.

Furthermore, if presented with opposition, it is helpful to gather all the key players together and work through areas that may seem unfeasible. For example, one challenge that came from the program was how to prevent the organic material from going in the same dumpster that contained trash materials. Though it seemed like an impossible obstacle, the solution was as easy as using different colored roll carts to collect the pulped material. It is also helpful to run pilot

programs for testing and planning as they identify unforeseen challenges which can be corrected before implementing the initiative. The pilots should test unknowns such as logistics, overall success of material usage, the receiving and redistribution processes, and unforeseen challenges.

Looking forward, Food Services will continue to evaluate current sustainability practices to see how they can be improved and will look for opportunities to further support campus sustainability. It is the hope of UGA Food Services that other institutions will learn of this best practice through the SACUBO competition and realize how simple modifications can lead to considerable reductions in the environmental impact of their own dining programs.