Pollution Prevention Institute
Kansas State University

Strategies to Reduce Food Waste

What is food waste?
Food waste occurs when an edible item goes unconsumed. Surplus or excess food may include unsold food, untouched prepared food or trimmings from preparation. Surplus food is not spoiled but includes unsold food from retail stores, and untouched prepared food or trimmings from restaurants, grocery stores, or cafeterias. The terms surplus or wasted food are often used when discussing food recovery for donations to feed people. Food waste includes food inedible for human consumption that is sent for disposal[1]. The two categories of food waste are pre-consumer and post-consumer. Pre-consumer food waste includes trimmings from preparation and food brought back to the kitchen from serving lines. Post-consumer is better known as plate waste — what the consumer leaves on his or her plate to be thrown away.

Why should we care?
Each year America spends $218 billion a year processing, transporting and disposing food that never gets eaten. Food waste accounts for 21 percent of all fresh water usage, 18 percent of cropland use and 21 percent of waste in landfills — all while one in seven Americans are food insecure[2]. When food is sent to the landfill, it emits greenhouse gases that can cause heat to be trapped in our atmosphere. Higher temperatures can affect crop yields and extreme weather events, increasing the risk of hunger from lack of food, and increased prices on certain foods with increased demand and lack of supply[3].

The following are suggestions of best management practices universities can implement to help reduce costs, improve their GHG footprint or help feed hungry people by diverting food from landfill disposal.

Track food waste. Without tracking, it's impossible to know where areas of opportunities exist and measure improvements. Tracking can be done on the pre-consumer side (preparation and kitchen waste) and postconsumer (what food is thrown away after purchase) side.

Join a food waste organization or challenge. Partnering or establishing food waste programs on campus helps raise awareness and provide guidance to best management practices. Programs such as the Food Recovery Network and the Campus Kitchens Project collect excess food from dining halls or events and repurpose it into ready-to-eat meals that can be donated to campus cupboards or food pantries. The EPA's Food Recovery Challenge helps track progress and offers awards and recognition.

Review food safety and storage procedures. Food safety is important for our health, but also for limiting food waste. Food can be reused or repurposed into another dish if stored properly. Organizing products by expiration date can help staff find products easier and lead to a more efficient use of inventory[4].

The name game. The name, appearance and reputation of a food forms our expectations of it. By creatively naming foods on the menu and enforcing them with students, consumption rates have been found to increase by 40 percent. Food names containing sensory adjectives to increase appeal are recommended for high school and college consumers, but names can also be funny or inspired by location such as the university's mascot[5].

Go trayless in dining halls. Eliminating trays in dining halls has been proven to decrease excess production food waste in the kitchen by 72 percent and consumer plate waste by 18 percent[6] .

Promote responsible consumption to students. Posting signage around the cafeteria and at the beginning of buffet lines to prevent people from taking more than they can eat, and labeling waste bins "landfill," if that is where the food goes at the university, could help reduce consumer food waste and lead to more accurate production. Simple signage with slogans such as "All taste... No Waste," or "Help us prevent food waste: Take all you want, but eat all you take," can have significant impacts[7.]

Involve students. Consider taste testing and polling to get feedback from students on what foods they are likely to eat[8].

Be creative. If overproduction does occur, excess food can be used in new dishes. Stale bread can become croutons or used as breadcrumbs; fruit can be used in smoothies or used as dessert topping; and vegetables can be used in soups, stocks, and sauces, or used as pizza toppings[9].

Donate food to humans. When large amounts of good food don't sell, it can be donated to students experiencing food insecurity[10], campus cupboards, or food pantries. Twitter accounts or text message alerts can provide channels to alert locals when excess food from events is available. This eliminates the transportation factor, as the people in need will come to the source. Apps such as Feeding America's MealConnect allow for efficient donation practices for organizations that have irregular donation capabilities.

Donate to animals. When food waste is not edible for humans, it can be donated to local farm animals or zoos. Quest Resource Management can provide this service and offers assistance in waste management and reaching environmental goals.

Compost inedible food waste. When food waste is inedible for humans or animals, composting can be implemented to reduce greenhouse gas emissions that would be emitted if the food was sent to the landfill. Missouri Organic's Food Residual Environmental Diversion (FRED) program offers large-scale food composting as well as training and audits.
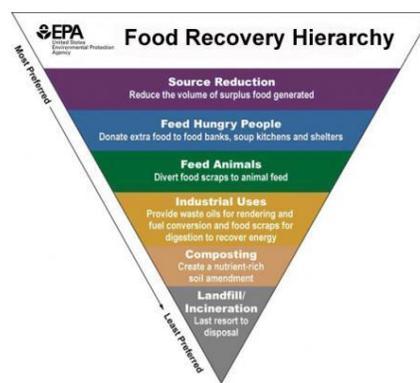
When in doubt, follow the EPA's food recovery hierarchy. This guideline prioritizes actions organizations can take to prevent wasted food, with each tier focusing on different management strategies for wasted food. The top levels are the best ways to prevent and divert wasted food, because they create the most benefits for the environment, society, and the economy.

Sources
1. https://www.epa.gov/sustainable-management-food/sustainable-management-food-basics#what
2. http://www.refed.com/?sort=economic-
3. https://www.wfp.org/climate-change/climate-impacts
4. http://articles.extension.org/pages/73463/schools-reduce-food-waste-through-improved-front-and-back-of-the-house-techniques
5. http://articles.extension.org/pages/73787/the-name-game:-sending-the-right-messagehttp://articles.extension.org/pages/73463/schools-reduce-food-waste-through-improved-front-and-back-of-the-house-techniques
6. https://fruitfuldurham.files.wordpress.com/2009/06/virginia-tech-trayless-study.pdf
7. https://www.reuters.com/article/us-awareness-college-food-waste-idUSBRE90A0YY20130111
8. http://articles.extension.org/pages/73463/schools-reduce-food-waste-through-improved-front-and-back-of-the-house-techniques
9. https://www.epa.gov/sustainable-management-food/how-prevent-wasted-food-through-source-reduction
10. https://studentsagainsthunger.org/hunger-on-campus/