Letter from the NRES Steering Committee Chair

*By Dr. Mary A. Arthur*

These are exciting times for the NRES program! After 20 years, first as the NRCM program and now as NRES, we have alumni located across the U.S., and even the world; students from increasingly diverse backgrounds; and a dramatic increase in the number of students studying abroad. As we work to stay in touch with our alumni, we are also able to connect our students to increasingly varied internship opportunities as far away as Alaska and Thailand. NRES students themselves bring an increasing array of interests and greater geographical diversity to the program, which extends beyond the U.S. Our students are also following diverse pathways to finding NRES. For example, Naomi Martinez (NRES ’13), highlighted in this newsletter, found the NRES program after she had been working on her Associate’s Degree at Bluegrass Community and Technical College (BCTC).

Our students continue to pursue their varied interests while majoring in NRES. For example, our students have been successful in pursuing research interests as part of their NRES program. Stratton Hatfield (NRES ’13) and Sarah Barney (NRES ’14) both recently presented their research at Posters at the Capital in Frankfort, KY. This summer we have 20 students traveling to Costa Rica, and several more are traveling to Indonesia, with UK-sponsored courses. The course in Costa Rica fulfills the summer camp requirement and will be led by Rob Paratley along with Dr. Steven Price; the hope is that this course will be offered every year as an alternative to the longstanding summer camp experience at Robinson Forest, providing students with a choice between two fantastic summer camp opportunities. In addition to UK Education Abroad course, our students are finding other avenues for traveling abroad. One of our recent graduates, Patrick Johnson (NRES ’12), traveled to Hyderabad, India, in October of 2012 as a delegate to the XI UN Conference of Parties Convention on Biological Diversity (see story in this issue). Patrick was also the recipient of this year’s Sullivan Award, and exemplifies...
the sort of campus leadership and involvement with extracurricular activities that many of our students pursue. We’re excited about all the new opportunities opening up for our students as we continue to build on our 20-year history, bringing the study of natural resources and environmental science to engaged students at UK.

As always, if you have news you would like to see included in the newsletter, or other comments or information, please email me at marthur@uky.edu. We are excited about the ways the NRES program is improving and growing and aim to keep you informed of our activities and engaged in our students’ success.

NRES Alumnus Patrick Johnson Wins Sullivan Award

Congratulations to Patrick Johnson (NRES ’12) for winning the 2013 Algernon Sydney Sullivan Award. The award, established in 1925 in memory of Algernon Sullivan, a prominent humanitarian, seeks to recognize and honor those dedicated to public service and humanitarian work.

“Patrick is wholly committed to work directed toward improving global sustainability in service to human health and well-being,” wrote one of his nominators for the award. This could not be more true. Patrick has been involved in countless initiatives both on campus and beyond, accepting the workload of many for the benefit of others.

During his time at UK, Patrick coordinated the UK Greenthumb Environmental Group, was a prominent member of the UK Office of Sustainability, a member of the UK Student Sustainability Council (the organization which delegates use of the UK Environmental Stewardship Fee), and volunteered for various other campus organizations. Patrick also co-founded the HomegrownKentucky initiative as part of the Clinton Global Initiative which worked to bring sustainable food sources to a food desert in Owsley County, Kentucky.

Beyond UK, Patrick served in leadership roles in the Sierra Club, has worked in the American/Mexican Southwest promoting water conservation along the Colorado River, and attended the United Nations’ XI Conference of Parties Convention on Biological Diversity in India (see page 3). Of Patrick’s work, one nominator wrote “he... carries this heavy load of community service and activism with such humility and total lack of fanfare that... one can still overlook this remarkable young man who so graciously defers credit to others for accomplishments stemming from his own pivotal contributions.” This dedication to sustainability and humanitarianism exhibits many of the great qualities of Algernon Sydney Sullivan and of any great humanitarian.

For more information on the Algernon Sydney Sullivan Award, please visit: http://www.uky.edu/SullivanAward/

Photographs by the University of Kentucky
Patrick Johnson is a name familiar to most current students in the NRES program. Although Patrick graduated this past December, he has left a lasting mark on the university and beyond. Last semester, Patrick was able to attend the 2012 United Nations Convention on Biological Diversity in Hyderabad, India. After devoting his summer to working with the Sonoran Institute on water issues along the Colorado River in the American Southwest and Mexico, he was selected as one of three delegates representing SustainUS, a US nonprofit organization that promotes sustainable development, to attend the convention.

“I was able to attend all the sessions of the Convention on Biological Diversity as well as work with youth from around the world to deliver interventions during policy conversations,” he said. Patrick was also able to gain much from the experience beyond the conference. “I also had the opportunity to meet individuals from around the world and experience a remarkably different culture,” he said.

Patrick has no intention of ending the fight for environmental stewardship and sustainability around the world after attending the convention. “I hope the experience will lead to further opportunities to participate in US delegations to United Nations conferences around the world,” he said. He also said that he now has “a better understanding of how local environmental issues impact the entire world’s population. This experience has motivated me even further to fight for social and environmental justice around the globe,” he continued.

Patrick believes that as some of the most environmentally aware and educated members of our community NRES students have an obligation to work to protect the resources we all rely on. “Current students can and should get involved in local lobbying efforts to try to make the change they want to see in the world. Through these efforts, they will be able to understand how change occurs,” he said. “If a student wants to be chosen to participate in a convention like this, he or she will have to have a strong understanding of all the issues that will be discussed.” Patrick exemplifies how students in the NRES program have been able to excel by using their education and experiences to make a difference in the world.

Patrick will likely be involved in the selection process for the delegates that will represent the US at the XII Conference of Parties Convention on Biological Diversity in the Republic of Korea in 2014. If you are interested in applying, please email him sometime this fall at john0504@vandals.uidaho.edu for more information.

The logo for the XI Conference of Parties Convention on Biological Diversity in Hyderabad, India
NRES Students and Alumni

Students in the NRES program come from varied backgrounds across Kentucky, the US, and even the world. Thirty Kentucky counties, eight states, and two other nations are represented by students in the program, showing the wide diversity in the student base in our multi-disciplinary major.

Other States Represented:
- Georgia
- Illinois
- Missouri
- Ohio
- South Carolina
- Tennessee
- Virginia

Other Countries Represented:
- Brazil
- Kenya

Thirty Kentucky counties across the state are represented in the NRES program.

The varied places our students come from is not to be outdone by all the places our graduates end up. While most graduates from the NRES program find careers in Kentucky, NRES graduates are currently working in 31 states plus Washington, D.C., and even abroad.

Other States Represented:
- Alaska
- Hawaii

Other Countries Represented:
- Australia

NRES alumni currently live in 31 states, Washington, D.C., and Australia.
Student Highlight: Naomi Martinez

NRES students are attracted to the major from diverse backgrounds—one of the factors that makes the learning experience in this program so rich and fun. Naomi Martinez (NRES ‘13) is no exception. Although Naomi is from Lexington, she, like many NRES students, didn’t know what she wanted to do when she first arrived at UK. After taking classes for a couple years, she never really found a good fit and left school to work for a while.

Although she didn’t find her calling initially, Naomi had a passion for learning and went back to school at the Bluegrass Community and Technical College (BCTC). There, Naomi signed up for a variety of classes to gain insights into many fields with the intention of finding a field she wanted to work in for the rest of her life. She found her calling when she took a course called Hazardous Waste Management, taught by Tracy Knowles. “The course was fascinating to me and in it I realized my love for environmental science,” she said.

When Naomi found out about the NRES program at UK, she took part in the BCTCblue+ transfer program which allowed her take half of her courses at BCTC and half at UK while working to complete an NRES degree. “This was a great fit for me,” Naomi said. “Being able to benefit from amazing teachers in two separate institutions helped me get the most out of my college career.” In addition, Naomi was able to complete an A.S. in Environmental Science Technologies at BCTC while working toward her NRES degree.

“The transfer program was a very simple process facilitated through a strong partnership between UK and BCTC,” she said. “It’s absolutely great for students who aren’t quite sure what they want to study in college. There’s a great community at BCTC with amazing teachers, many of whom I still stay in contact with today!”

Naomi is as enthusiastic about the NRES program as she is about BCTC. “I really feel like I am at home here in NRES,” Naomi said. “There is an amazing student community here that I feel like anyone would fit into.” Naomi will have the opportunity to travel to Costa Rica this summer with the new Education Abroad summer camp (NRE 320), providing course support and helping develop course materials as her internship. Although Naomi is excited about graduating this year, she will miss her time here at UK. “I don’t think I would have been happier anywhere else,” she said.

To learn more about the BCTCblue+ program, please visit:
http://www.uky.edu/US/pathways.html
ESEA Highlight: Water Resources

Since the shift from the NRCM program to the NRES program, students are able to focus their studies on one of several Environmental System Emphasis Areas (ESEAs). One of the most popular of these is the “Water Resources” ESEA. Students choosing this ESEA can expect to gain “a fundamental understanding of the hydrologic cycle so that students understand how climate, soils, vegetation, and land-use affect the amount, timing and quality of water” (NRES Curriculum).

One student who has found his calling in water resource management is Evan Wesley (NRES ’13). “This ESEA was an obvious choice for me,” he said. “I want to eventually work to help stop many of the issues occurring with the international water crisis and many of the classes in this area have helped me gain insight on how I can legitimately create change in the world.”

One of the classes with the biggest effect on Evan was Introduction to Stream Restoration (BAE 532) taught by Carmen Agouridis, Ph.D. “This class included a lot of experiential learning in the field and we were able to design a large project that could actually be implemented,” he said.

The Water Resources ESEA isn’t for everyone, though. “It’s important that you have a passion for water resource issues and are able to step back to look at the bigger picture beyond the city and state, even internationally, to be happy in this emphasis area,” Evan said.

Evan has been able to take part in many opportunities because of his experience in this ESEA. “I’ve worked for Edge Outreach, a Louisville, KY nonprofit, making chlorinization tanks to send to Haiti; LFUCG’s wastewater laboratory collecting samples and working in the lab; the UK Office of Sustainability promoting water-saving initiatives around campus; and the University of Florida in a research experience studying smart irrigation controllers, reuse of graywater, and salinity stress on citrus plants,” he said. “You are opened up to an incredible range of options in this area.”

“You have to be able to understand that we are extremely lucky where we live that we have so much water, and respect the fact that this isn’t the case everywhere,” he said. “If you can do that, Water Resources may be a great fit for you!”

Water Resources not for you? Check out these other ESEA options!

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<th>Environmental System Emphasis Areas (ESEAs)</th>
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<tr>
<td>Conservation Biology</td>
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<td>Soil Science</td>
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<td>Human Dimensions and Natural Resource Planning</td>
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ASD Highlight: Economic and Policy Analysis

Since the introduction of the required Analytical Skill Development (ASD) areas within the NRES program, NRES students have enjoyed choosing to take courses in the specialized skill area that most interests them. One of the most popular ASDs, Economic and Policy Analysis, is designed to give students an understanding of environmental policy and the agencies that regulate it. Courses that fulfill this requirement include: Environmental Management and Policy (GEO 335), Forest Valuation and Economics (FOR 320) and Resource and Environmental Economics (NRE 545).

According to Michelle Gilmore (NRES ’14), the most rewarding of the possible courses is Forest Valuation and Economics. “We worked with real life situations and learned how we could use this information in a professional setting. I enjoyed learning how one can use forestry and natural resource valuation to help develop policy,” said Michelle. Michelle is particularly interested in marine conservation policy and is motivated by the natural and human destruction she has seen plague the coast near her hometown in Alexandria, Virginia. She hopes to further her education and attend a public policy graduate program.

Another NRES Junior who chose this ASD, Ross Bundschuh, is interested in a different pathway: law school. Environmental Management and Policy (GEO 335) was a favorite ASD course for Ross. “The class gave me insight and background on the policy aspect of natural resources,” and has further stimulated his interest in the field.

According to Ross, “The ASD option is one thing that makes NRES unique.” NRES students are grateful for the opportunity to specialize in policy through their Analytical Skill Development selection.

Not interested in Economic and Policy Analysis? Check out these other ASD options!

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<thead>
<tr>
<th>Analytical Skill Development (ASD)</th>
<th>Examples of Courses</th>
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<tr>
<td>Field and Laboratory Analysis of Ecosystems</td>
<td>BIO/NRE 420G Taxonomy of Vascular Plants</td>
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<td>ENT/FOR 402 Forest Entomology</td>
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<td>PLS/NRE 455G Wetland Delineation</td>
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<td>Geospatial Analysis</td>
<td>FOR 330 GIS and Spatial Analysis</td>
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<td>GEO 415 Map Interpretation</td>
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<td>BAE 538 Applications for Water Resources</td>
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Don’t forget! NRES students can also propose their own individualized ASD. Past examples include: Invertebrate Ecology and Anthropology.
NRES Students Attend the 2012 Kentucky Association for Environmental Education Conference

This past fall, five NRES students were able to attend the 2012 Kentucky Association for Environmental Education (KAEE) annual conference at Lake Cumberland State Resort Park. This was made possible through five competitive scholarships to attend the conference and receive a one-year student membership to KAEE funded by the College of Agriculture and HES Alumni Association.

“This was a great opportunity for professional development, networking, and to experience a professional conference,” said NRES Academic Coordinator Geri Philpott. “Getting to talk to other educators from around the state and discuss topics like current trends in environmental education were great for both me and the students.”

Conference attendees participated in sessions on environmental and pedagogical topics. Some of these sessions included site visits, such as one to a wetland and a visit to the Wolf Creek National Fish Hatchery, managed by the U.S. Fish and Wildlife Service. Each session ultimately helped attendees find the best ways to implement a wide range of topics related to environmental science into a curriculum.

Along with NRES students from the University of Kentucky, students from Transylvania University also attended. “I really enjoyed being able to interact with other college students with similar interests in environmental education,” Eric Hope (NRES ’13) said. “It’s refreshing to know that there is a large contingent of college students with an interest in promoting environmental education both in and outside of the classroom.”

It was a great opportunity for students to network with professionals from around the state. “What I enjoyed most about the KAEE Conference was the assembly of like-minded individuals who have a passion for initiating sustainability efforts on school campuses across Kentucky,” said Evan Wesley (NRES ’13). “Sustainability starts with the education of our young people and I truly believe great change is possible with an emphasis being placed on sustainability and the environment in both primary and secondary educational classrooms.”

If you are interested in KAEE, learn more at: http://kaee.org/; if you are interested in attending the 2013 KAEE conference at Lake Barkley State Resort Park, please contact Geri Philpott at: geri.philpott@uky.edu.

Congratulations to NRES Academic Coordinator Geri Philpott on being elected to the KAEE Board! She will be co-chairing the 2013 KAEE Conference at Lake Barkley State Resort Park.
NRES Students Present at Posters at the Capitol

This February, two NRES students had the opportunity to share their research projects with Kentucky Legislators at the annual Posters at the Capitol event in Frankfort, KY. Each year, students from universities across the state and from all disciplines submit research abstracts with the hopes of presenting their work at what Governor Beshear has declared Undergraduate Research Day. NRES senior, Stratton Hatfield, and NRES junior, Sarah Barney, were both chosen by UK’s Office of Undergraduate Research to present their posters.

On the day of the event, the State Capitol was filled with posters, as students, faculty members, legislators and university presidents wandered the rows to talk with students about their projects. “It was an opportunity to share my hard work with others, and overall, I most enjoyed interacting with other students working on undergraduate research,” Sarah said. Stratton agreed that meeting other undergraduate researchers made the event a great experience.

Sarah’s project focused on finding sustainable solutions to Kentucky squash pests. She enjoyed the event because, “it was good practice presenting my work to people unfamiliar with ecology before I share my results at a molecular ecology symposium in May.”

While Sarah was collecting insects at UK’s South Farm, Stratton was half way across the world observing lions at the Naboisho Conservancy in southern Kenya. He is interested in understanding the park’s lion population dynamics, work that he believes will emphasize the need for lion conservation in the region.

Both students agreed that by participating in research and sharing their findings with others at events such as Posters at the Capitol, they have been able to focus their career interests. Sarah designed her own ASD in Invertebrate Ecology to pursue her interests in the insects she studies. Stratton learned that conservation work is inherently interdisciplinary and has since added a minor in Agricultural Economics to complement his NRES degree. For students interested in working on a project of their own, Stratton advised “Don’t be afraid to approach professors and ask them about opportunities to do research with them.”

For more information on the event or similar opportunities, visit the Office of Undergraduate Research in 211 Funkhouser or on their website at http://www.uky.edu/UGResearch/.
Alumni Highlight: Zak Danks

Zak Danks (NRCM ’04) is currently a wildlife biologist working for the Kentucky Department of Fish and Wildlife Resources (KDFWR). As an undergraduate, Zak focused his studies on wildlife management and conservation biology, making his eventual transition to KDFWR a great fit.

While at UK, Zak pursued his love for wildlife management working in the field. “I was very lucky to have spent two summers as a field technician in southeastern Kentucky assisting several graduate students advised by the late conservation biologist Dr. David Maehr, formerly of the UK Department of Forestry,” Zak said. “In 2003, I helped capture, collar, and track black bears in and around Cumberland Gap National Historic Park and Kingdom Come State Park. In 2004 I performed similar work with elk on reclaimed mine habitat near Robinson Forest.”

Zak didn’t stop pursuing his education at UK. He went on to complete his M.S. in Wildlife Biology and Management from the SUNY College of Environmental Science and Forestry in Syracuse, NY. “While completing my thesis, I was employed as a research assistant and helped on a number of projects,” he said. Some of the opportunities he experienced included researching disease impacts on moose and deer, long-term songbird and amphibian population studies, and vegetation responses to forestry treatments. “Being involved with university researchers, agency biologists, and private landowners on various projects... provided a depth of experience and skills that led to three job offers after graduating.”

His hard work as a student paid off when he accepted a position with KDFWR in 2007. Since then, he has served three roles, each focusing on habitat improvement and conservation across Kentucky. “Currently, I am a liaison between KDFWR and the USDA Natural Resources Conservation Service (NRCS) - the go-to federal agency for land conservation on private farms and ranches,” he said. “My job is to help NRCS promote and administer farm bill conservation programs for wildlife habitat improvement, a job that requires not only in-depth understanding of wildlife ecology, but also agriculture and forestry operations, conservation of water and soil resources, and federal and state policies and regulations.” There is no doubt that his multifaceted educational career in the NRCM program at UK gave Zak much of the background necessary for this position.

Zak has been successful in part because he took advantage of the amazing resources afforded to him at UK. “Most valuable to me were the opportunities to learn from some very smart and passionate instructors, both professors and graduate students,” he said. “I took full advantage of the chance to learn from these folks and to impress them with my interest, talent, and dedication. These connections got me into grad school and got me a job!”

Zak advises that current students “always be open-minded and eager to learn.” Through hard work and dedication while in the NRES program and beyond, any student in the program could end up in a career they truly love.
Alumni Highlight: Sarah Wightman

Sarah Wightman (NRCM ’10) is a great example of a recent graduate who is taking her NRCM education to great heights. Sarah is working to complete both a J.D. from the University of Michigan (UM) Law School and a M.S. in Natural Resources and Environment, with a concentration in Environmental Policy and Planning, from the UM School of Natural Resources and Environment.

Sarah began her policy studies in the NRCM program where she completed her concentration area in Environmental Policy and Planning. She took a variety of courses, including Introduction to Planning, Advanced GIS, and Stream Restoration, among other courses tied together by their relevance to policy and planning. She connected her concentration to a policy-related internship with the Kentucky Department for Environmental Protection in the Division of Compliance Assistance. There, she “drafted compliance materials for regulated entities like gas stations and hazardous waste generators. This meant ‘translating’ confusing regulations into educational materials that the regulated entities could understand and actually use,” she said. That internship led to a position in the NRCM program where she wrote the original editions of the newsletter you are reading today! Immediately after graduating, Sarah then took a position drafting educational publications in the Biosystems and Agricultural Engineering Department.

Today, Sarah finds herself nearing the end of her first year in law school. Although she has not yet begun taking classes directly related to environmental law, she is very involved in that arena outside of the classroom. “I am involved in a lot of extracurricular activities that provide some experience in environmental law,” she said. “I am a 1L Representative on the Environmental Law Society... helping plan speakers and social events for environmentally-minded students at the law school... and a General Member on the Michigan Journal of Environmental and Administrative Law.”

As a General Member of this journal, Sarah has been able to publish an online blog on stream buffer regulations in the Northwest and will have another published in the near future. In addition, Sarah will be working for the U.S. EPA Region 3 Office of Regional Council in Philadelphia, an internship that will enable her gain to insight into the field of environmental law.

One of the secrets to Sarah’s success is that she was very active outside of class; by making connections with as many professionals as possible, from professors to fellow students and community members, she created a strong base of contacts and relationships she can rely on throughout her educational and professional careers. These are connections she believes every current student should be making. “All of these connections could provide leads for future opportunities in a variety of fields,” she said.

Sarah thinks another key to her success is that she applied herself in and outside of class. “This may sound obvious,” she said, “but really try to learn the material in class, engage with professors (in class and outside of class), and ask questions when you don’t understand things. After you graduate, the most valuable things you have are the skills you’ve learned, not just the degree; be sure to make it all count so you are attractive to employers and graduate programs, and so you really get the most out of the great experience that is the NRES program!”

To read Sarah’s blog post, please visit: http://students.law.umich.edu/mjeal/2012/12/stream-buffers-to-protect-endangered-salmon-where-does-the-epa-stand/
Professional Resources

Graduates of UK’s natural resource program have a wide variety of professional opportunities in many different sectors and disciplines. There are countless ways to approach the search for a new job, some of which are listed below. More can be found online: http://www2.ca.uky.edu/nres/professional-opportunities

**Government**
- All Federal Jobs
- Environmental Protection Agency (EPA)
- National Park Service (NPS)
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Fish and Wildlife Service
- Commonwealth of Kentucky
- Lexington-Fayette Urban County

**Consulting Industry**
- Kenvirons
- Tetratech
- Stantech
- Third Rock Consultants
- Copperhead Consulting

**Non Profit**
- Bluegrass Pride
- The Association for the Advancement of Sustainability in Higher Education
- World Wildlife Fund
- The Wilderness Society

**Nationwide/Worldwide Environmental Job Sites**
- Society for Conservation Biology Job Database
- Texas A&M Department of Wildlife and Fisheries Science Job Board
- Society of Wetland Scientists Jobs Board
- Conservation Job Board

**Seasonal Employment/Internships**
- Coolworks
- The Student Conservation Association
- Cyber-Sierra

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### Spotlight on Sustainability: UK Dining Services

The University of Kentucky has been very lucky to have an in-house dining operation in UK Dining Services. Although UK Dining Services is known for its good and varied food across campus, they have also made great strides in promoting a more sustainable living and learning environment here at UK.

Dining Services serves food that is grown right here in Central Kentucky! Along with a large percentage of Kentucky Proud™ products served at all the dining facilities on campus, Dining Services has also partnered with the UK College of Agriculture so that some of the produce and animal products grown and processed by students here ends up on the plates of their peers.

Dining Services also does their part in making sure all the food they serve was harvested sustainably to protect valuable resources like our fisheries. They also have a standard for only purchasing Fair Trade Certified products, from coffee to fruit, to protect the people that harvest the food as well. The hope is to feed students food that is as good for them as it is the environment.

Recently, the UK Office of Sustainability partnered with UK Dining Services to reduce the impact of Styrofoam to-go containers formerly common at all Dining Services facilities. Now, North Campus residents are able to take their food to-go in a reusable container at Blazer Café. This is just another way UK Dining Services has made a change to promote sustainability on campus while still providing students great food and excellent service.

*Photo by UK Dining Services*