

# Sustainability Challenge Grant Program

Five Year Review:  
2015-2019



# Program Overview

The Sustainability Challenge Grant program is designed to engage multidisciplinary teams from the University community in the creation and implementation of ideas that will promote sustainability by simultaneously advancing economic vitality, ecological integrity and social equity. In the first five years of the program, 33 projects were awarded almost \$900,000 to pursue transformational, sustainability-driven projects on campus and beyond.

The program is a collaborative effort of the President's Sustainability Advisory Committee, The Tracy Farmer Institute for Sustainability and the Environment, and the Office of Sustainability. Funding support for the program is provided by the Executive Vice President for Finance and Administration, the Provost, the Vice President for Research, and the Student Sustainability Council.

The Sustainability Challenge Grant Steering Committee is composed of Shane Tedder, Helen Turner, Bob Jewell, Courtney McCarthy, and Krista Jacobsen.

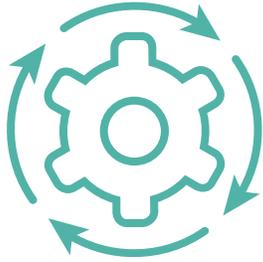
## Goals and Strategy

In 2014, the Sustainability Challenge Grant program was developed to engage multidisciplinary teams from the University community in the creation and implementation of ideas that will promote sustainability by simultaneously advancing economic vitality, ecological integrity and social equity, now and into the future.

Calls for proposals are typically put out during the spring semester and teams are given a month to submit potential projects. Project teams must be led by a faculty or staff member whose home unit/department agrees to manage the dispersal of funds. Student involvement is strongly encouraged. Teams must include representatives from at least two distinct organizational units.

Funds are awarded based on a rubric that prioritizes transformational potential, creativity, measurable impacts, student-engagement, number of departments on the project team, use of campus as a living laboratory, and the potential for institutionalization.

In general, proposals directly address one or more of the following categories:



### **Operations**

Using the principles of sustainability to improve material, physical, or infrastructural elements at the University of Kentucky



### **Engagement**

Fostering a campus and community culture of sustainability



### **Research**

Discoveries with the potential to catalyze operational, academic, or cultural change at the University of Kentucky and beyond



### **Academics**

Improving the university's capacity for integrating sustainability with the educational experiences of our students in both curricular and co-curricular activities

In 2021, the call for proposals was adjusted to include a focus on the University's current challenges and priorities. The selection process prioritized proposals that connected with the University's recently formalized Research Priority Area of Diversity and Inclusion and ongoing efforts of the various Diversity, Equity, and Inclusion work streams, as well as proposals centered around post-COVID challenges.

# Funded Projects

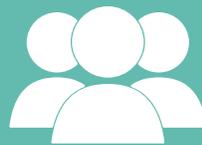
From 2015-2019, 33 projects were awarded a total of almost \$900,000 to pursue transformational, sustainability-driven projects on campus and beyond.

## Team Demographics

Sustainability Challenge Grant projects have had a far-reaching impact on the campus community. Of the 33 projects funded, there have been a total of 157 unique team members from 40 departments across 11 colleges, representing campus faculty, staff, and students, as well as community partners.

Category	Team Members	Depts. Represented	Colleges Represented
UK Students	27	16	6
UK Faculty	77	29	8
UK Staff	44	32	N/A
Community Members	9	7	N/A

## Interdisciplinarity



The average team represents four unique departments at UK!

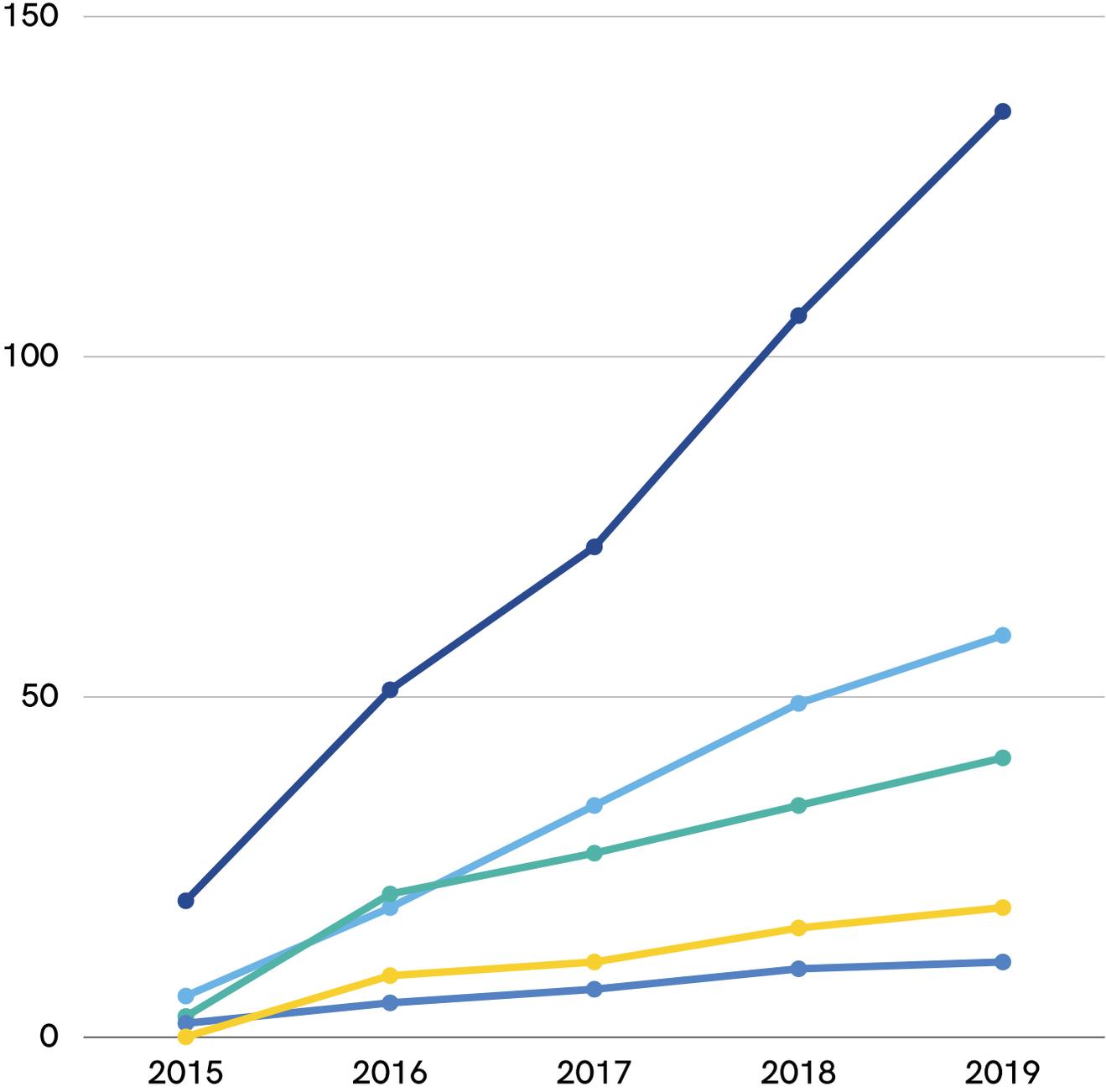
# Key Performance Indicators

Sustainability Challenge Grant projects have been successful in prioritizing outreach, using campus as a living lab, collaborating with on- and off-campus partners, and generating scholarly products.

To date, Sustainability Challenge Grant projects have reached and engaged almost 7,000 students and community members; campus has been used as a living lab nearly 60 times; teams have created 136 new cross-campus or community partnerships; 71 scholarly products have been created, including 41 conference presentations, 11 peer-reviewed journal articles, and 19 other publications. See Appendix A for a breakdown of these performance indicators by project.

Category	Amount	Units
Outreach	3,165	UK students engaged
Outreach	1,493	K-12 students engaged
Outreach	2,150	Other community members engaged
Campus As Living Lab	59	Times campus utilized as a living lab
Collaboration	136	New cross-campus or community partnerships
Scholarly Products	41	Conference presentations
Scholarly Products	11	Peer-reviewed journal articles
Scholarly Products	19	Other publications

# Cumulative Key Performance Indicators 2015-2019



- New cross-campus or community partnerships
- Conference presentations
- Peer-reviewed journal articles
- Times campus utilized as a living lab
- Other publications

# Testimonials

"Over the past five years I have had the opportunity to collaborate with faculty from over a dozen other disciplines on five UK Sustainability Challenge Grant projects. The projects have covered a range of sustainability outcomes such as rethinking a medical campus courtyard as a place to heal people and the environment; examining bike travel patterns and identifying strategies to increase and improve cycling on campus and nearby areas; and assessing the resources needed to develop multicultural gardens for our diverse campus community while providing access to healthy food options. All of these projects have led to envisioning a healthier, more equitable and inclusive campus."

**Dr. Carolina Segura Bell**

2017, 2018, 2019, 2021 Sustainability Challenge Grant Recipient

*Connectivity Promotes Community*

*S.KYBLUE at UK Organic Unit*

*Improving Bicycle Infrastructure Using Spin Bike Data*

*Diverse Landscapes for Nature Rx on the UK Medical Campus*

*Planning Global Gardens at UK: Cultivating Inclusive Spaces with*

*Nutritional Sciences*

"The funding provided by the Sustainability Challenge Grant allowed our group to not only expand the capacity of our existing refurbishing and reutilization program, but to move in directions we had not originally planned. This has opened up new opportunities to work closer with rural communities to not only refurbish more used durable medical equipment but also to create a new adapted toy lending library program that repurposes and adapts toys for children with disabilities."

**Dr. Patrick Kitzman**

2020 Sustainability Challenge Grant Recipient

*Coordinating and Assisting the Reuse of Assistive Technology in Rural Appalachian*

*Communities: A Service Learning Program*

"The SCG program has been instrumental in helping the UK Center for Applied Energy Research (CAER) to collaborate with other units on campus to ensure UK undergraduate and graduate students gain access to sustainability-related research opportunities. Moreover, it has made possible for the researchers and students involved in its funded projects to participate in dissemination and outreach efforts. In this way, the work supported has been able to impact the scientific community (e.g., through peer-reviewed publications and presentations in scientific conferences) as well as society at large in the form of the immediate community and younger audiences in particular. Indeed, sustainability and recycling outreach events supported by the SCG program have involved the Lexington Fayette Urban County Government and community as well as the K-12 system."

**Dr. Edwardo Santillan-Jimenez**

2020 Sustainability Challenge Grant Recipient

*Research Innovators in Sustainable Energy*

"The Sustainability Challenge Grants I was awarded made it possible to engage with first-year students directly in their evolving understanding of sustainability. Some of the most impactful outcomes involved the use of campus and community as a living laboratory. Students learned to look at their immediate environment with an eye to social justice, economic viability, and environmental health. Gaining this skill right at the beginning of their college career -- having that knowledge and access to resources -- means they can research and act on their interests over the duration of their time at UK."

**Dr. Alissa Rossi**

2018, 2019 Sustainability Challenge Grant Recipient

*Community Engaged Sustainability Education in the First Year Experience*

*Sustainability Module for First Year Experience*

# Projects in Progress

## 2020-2021 Funded Projects

The Sustainability Challenge Grant program is currently supporting sixteen ongoing projects that are expected to conclude by the end of June 2022. Ten of these projects launched in 2020. These are listed below and covered in more detail in Appendix B.

Building Community through Innovation and Sustainability of Kentucky's Forest

Evaluating Twenty Years of Urban Reforestation in Lexington

Sustainable Campus Electronics Recycling Program at the University of Kentucky

Place Setting: Enhancing Sustainable Approaches to Food Security and Community Engagement

Research Innovators in Sustainable Energy

Aerated manure compost facility for the smaller horse-farm operation

Coordinating and Assisting the Reuse of Assistive Technology in Rural Appalachian Communities: A Service Learning Program

Preparing our Urban Forests for our Changing Climate

Designing for Wellbeing: Mindful Oasis. Reimagining Gatton Student Center Botanical Gardens

Honoring Kentucky's Agricultural Excellence

## 2021-2022 Funded Projects

In 2021, the call for proposals was adjusted to include a focus on the University's current challenges and priorities. The selection process prioritized proposals that connected with the University's recently formalized Research Priority Area of Diversity and Inclusion and ongoing efforts of the various Diversity, Equity, and Inclusion work streams, as well as proposals centered around post-COVID challenges.

The 2021 funded projects will be leveraging WholeSum, a newly launched sustainability platform, to engage the public in their projects and to discuss results this upcoming spring. More information on WholeSum can be found in Appendix C.

Turning Plastic Waste into Fuel for Operating Campus Grounds Equipment

Climate Resilience through Community Resilience

Re-Visioning Hometown: From African American Freetown to Interpretive Public Place

Diverse Landscapes for Nature Rx on the UK Medical Campus

Stories of Asian Americans and Pacific Islanders in Kentucky

Planning Global Gardens at UK: Cultivating Inclusive Spaces with Nutritional Sciences

# Team Demographics

## 2020-2021 Funded Teams

Category	Team Members	Depts. Represented	Colleges Represented
UK Students	6	6	3
UK Faculty	25	16	7
UK Staff	17	14	N/A
Community Members	3	2	N/A

## 2021-2022 Funded Teams

Category	Team Members	Depts. Represented	Colleges Represented
UK Students	12	7	4
UK Faculty	31	24	9
UK Staff	9	7	N/A
Community Members	4	4	N/A

# Appendix A

## Impact by Sustainability Challenge Grant Project

### 2015 Sustainability Challenge Grant Projects

Project name	Student Engagement	Community Engagement	Campus as a living lab	Collaboration/ New Partners	Conference Presentations	Peer-reviewed Journal Articles	Other publications
The Campus Tree Initiative	80	250	3	3	-	-	-
University of Kentucky Food Summit	2	-	-	4	-	-	-
Big Blue Impact: Making Sustainability Visible	-	-	-	-	-	-	-
Development of Sustainable Bus Stops	17	-	1	7	-	-	-
Arboretum Drive BioSwale Demonstration	-	-	1	2	1	-	-
Empowerment for North Limestone Neighborhood Sustainability	100	-	-	4	-	-	-
Cultivating Place for a Sustainable Community	80	7	1	-	2	2	-

## 2016 Sustainability Challenge Grant Projects

Project name	Student Engagement	Community Engagement	Campus as a living lab	Collaboration/ New Partners	Conference Presentations	Peer-reviewed Journal Articles	Other publications
Creating Tree Ambassadors	431	990	7	12	6	-	-
Point of Departure	3	-	1	4	3	3	5
Establishing Native Forest on Surface Mines	-	146	1	9	-	-	-
From SEE(E)D to (S)STEM	150	250	-	1	2	-	2
Solar Powered Tractor	21	-	1	3	1	-	2
The Arboretums Children's Garden Patio and Wet Meadow Demonstration Area	50		1		4	-	-
Building an Inclusive Community	2	18	2	2	2	-	-

## 2017 Sustainability Challenge Grant Projects

Project name	Student Engagement	Community Engagement	Campus as a living lab	Collaboration/ New Partners	Conference Presentations	Peer-reviewed Journal Articles	Other publications
Community Engaged Sustainability Education in the First Year Experience	350	-	4	4	1	-	1
Connectivity Promotes Community							
Enhancing Student Development	15	8	5	3	2	-	-
Gathering at the Table	100	45	3	8	1	-	1
Measuring Up: Sustainability Assessment of Campus Buildings	930	57	1	1	2	1	
Mobilizing Tree Ambassadors	66	156	2	5	-	1	-

### 2018 Sustainability Challenge Grant Projects

Project name	Student Engagement	Community Engagement	Campus as a living lab	Collaboration/ New Partners	Conference Presentations	Peer-reviewed Journal Articles	Other publications
Kentucky Master Naturalist	17	24	3	17	2	-	3
Roots to Branches	12	224	3	9	1	1	-
Engaging Elementary Students In Horticulture	-	900	1	6	3	1	2
Sustainability Guidelines for Historic Campus Buildings	24	-	7	2	-	1	-
S.KYBLUE at UK Organic Unit	-	-	-	-	-	-	-
Teaching Sustainability + Teaching Sustainably	360	-	1	-	1	-	-

## 2019 Sustainability Challenge Grant Projects

Project name	Student Engagement	Community Engagement	Campus as a living lab	Collaboration/ New Partners	Conference Presentations	Peer-reviewed Journal Articles	Other publications
Improving Bicycle Infrastructure Using Spin Bike Data	38	-	1	-	-	1	-
Nature Playscape and Native Landscape	1						
Just Food: Engaging UK in Racially Equitable Food Systems Development	56	60	1	3	-	-	1
Tree CATS	128	457	4	10	4	-	-
Sustainability Module for First Year Experience	124	-	2	7		-	-
Organic Waste Composting Pilot Project	-	50	1	8	2	-	2
Kentucky Integrated Biorefinery	8	1	1	2	1	-	-

# Appendix B

## Project in Progress Social Media Series 2020-2021 Funded Projects

### UK Sustainability Challenge Grants **Project in Progress**



## Coordinating and Assisting the Reuse of Assistive Technology in Rural Appalachian Communities

The CARAT program increases mobility, decreases isolation, and improves community participation of individuals with disabilities in Kentucky through the refurbishing and redistribution of used medical equipment to individuals who could not otherwise afford it.

### Meet the Team



**Melissa Slone**  
Center of Excellence  
in Rural Health,  
College of Social Work



**Patrick Kitzman**  
College of Health Sciences



**Keisha Hudson**  
Center of Excellence  
in Rural Health



### Service- Learning

Refurbishment and reuse of medical equipment has created an interdisciplinary service-learning opportunity for students, allowing them to contextualize their experience and gain a greater appreciation of the supports and barriers to obtaining durable medical equipment in rural communities.



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Sustainability



President's Sustainability  
Advisory Committee



Tracy Farmer Institute  
for Sustainability  
and the Environment



# Sustainability Challenge Grant Project in Progress



## Place Setting: Enhancing Sustainable Approaches to Food Security and Community Engagement

This project aims to revitalize a student-led service organization, the Campus Kitchen at the University of Kentucky, and its community enrichment programs that addresses food waste and food insecurity by redesigning, renovating, and rebranding its space in Funkhouser Building to promote sustainability.

### Meet the Team



Helen Turner  
School of Interiors



Michael Pennell  
Writing, Rhetoric, & Digital Studies



Tammy Stephenson  
Dietetics and Human Nutrition



Kendra Oo  
Dietetics and Human Nutrition



### Recovery & Redistribution

The Campus Kitchen recovers unused, quality food and produce that would otherwise be wasted, then uses it to prepare healthy meals for the campus and Lexington community!



Farm-to-Fork, its largest program, serves free, nutritionally balanced lunchtime meals and provides educational resources to 120-150 students weekly.

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# Sustainability Challenge Grant Project in Progress



## Sustainable Campus Electronics Recycling Program

This project, run by UK Mining Engineering students, aims to collect unwanted personal electronic devices from UK students, faculty, and staff, to be recycled in an innovative way!

### Meet the Team



Joshua Werner  
Department of  
Mining Engineering /  
Institute for Sustainable  
Manufacturing



Jack Groppo  
Department of  
Mining Engineering /  
Center for Applied  
Energy Research



### For Students, By Students

As of December 2020, a total of 169 kg of personal electronic scrap has been collected from various UK Faculty, staff, and students!



UK Mining Engineering students collect and process the material, and will create a summary report to present at a national conference!

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# Sustainability Challenge Grant Project in Progress



## Honoring Kentucky's Agricultural Excellence

This project is aimed to create a sense of connectivity and inclusivity between all UK community members by placing murals on agricultural structures at UK's Spindletop Farm that honor our past, celebrate our present and inspire our future.

### Meet the Team



Erin Haramoto  
Department of  
Plant and Soil Sciences



Matthew Allen  
Department of  
Plant and Soil Sciences



Rebekah Epps  
Community and Leadership  
Development



### Art in Education

These murals will present teaching opportunities for teachers and advisors by providing a visual timeline of the many ways UK has influenced the evolution of sustainable agriculture.

They will also provide a focal point for Extension Outreach events!

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# UK Sustainability Challenge Grants Project in Progress



## Research Innovators in Sustainable Energy

Decarbonizing energy is one of the most critical issues facing our society today - and RISE is creating a skilled workforce equipped to meet this challenge.



Czarena Crofcheck  
Lewis Honors College

### Meet the Team



Niamh Minion  
Education Abroad & Exchanges



Eduardo Santillan-Jimenez  
Center for Applied Energy Research



Bessie Guerrant  
Office of Undergraduate Research



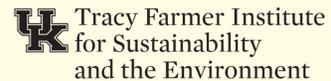
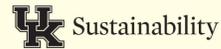
Fara Williams  
Kentucky-West Virginia  
Louis Stokes Alliance for Minority Participation



### Research Innovators

Undergraduate and graduate students have been supported in research projects focused on the **conversion of waste oils** to renewable fuels, **algae-based carbon capture and utilization**, and increasing the **economic viability of biorefineries** via lignin valorization.

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# Sustainability Challenge Grant Project in Progress



## Building Community through Innovation and Sustainability of Kentucky's Forest

This project's goal is to stimulate the production and adoption of cross laminated timber in the Architecture, Construction, and Engineering Industry through a CLT Symposium, student design and construction project, and a multi-year research project.



Bruce Swetnam  
College of Design

### Meet the Team



Brent Sturlaugson  
College of Design



Chad Niman  
Department of Landscape  
Architecture



Mariantonieta  
Gutierrez Soto  
Department of Civil  
Engineering



Joe Brewer  
College of Design



### Student Design & Construction

2nd year students from the College of Design will design and build, with a focus on carbon neutral strategies, a structure that will house and protect a new campus sawmill that was purchased through a partnership with Coca Cola!

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# UK Sustainability Challenge Grants Project in Progress



## Evaluating 20 Years of Urban Reforestation in Lexington

Reforest the Bluegrass is a highly successful urban reforestation initiative that has planted over 140,000 trees - and this project seeks to understand its ecological successes.



John Cox  
Forestry & Natural Resources

### Meet the Team



John Lhotka  
Forestry & Natural Resources



Heather Wilson  
City Arborist for Lexington



Kenton Sena  
Lewis Honors College



John Saylor  
Env. Services for Lexington



### Student Engagement

Student interns surveyed trees, shrubs, and other vegetation and collected soil samples in all twenty Reforest the Bluegrass sites.



Students also assist with water sampling and analyze their water quality data as part of a semester-long class project!

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# UK Sustainability Challenge Grants Project in Progress



## Preparing our Urban Forests for our Changing Climate

The climate is changing rapidly, and will impact ecosystems in varied ways. This project aims to develop climate adaptation plans for the trees on UK campus and the Arboretum.

### Meet the Team



Mary Arthur



Nic Williamson



Bryan Kist



Stacy Borden  
UK Grounds Manager



Lynne Rieske-Kinney  
Entomology



Chris Sass  
Landscape Architecture



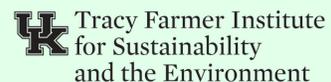
Emily Ellingson  
UK Arboretum



### A Roadmap to Success

This project aims to create a roadmap for supporting and building UK's tree canopy in the face of a rapidly changing climate by highlighting site-specific differences in management goals for different areas, despite similar overall climate change impacts.

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# Sustainability Challenge Grant Project in Progress

## Designing for Wellbeing: Mindful Oasis

Nature is a natural antidote to student stress, and this project seeks to take advantage of its benefits by developing construction drawings for a mindful outdoor space where a variety of wellness practices can be enjoyed.



Ryan Hargrove  
Department of Landscape  
Architecture

### Meet the Team



Maureen Dreckman  
Information Technology Services



Jake Rose  
Department of Landscape  
Architecture



Ashley Hinton  
Student Wellness Director



Omolade Akinyemiju  
School of Architecture



### A Mindful Oasis

Utilizing the existing sloped topography and existing vegetation between the Student Center and POT, the design will include a short walking path that leads to various seating and platform areas.



Within this dedicated space, a wide variety of wellness practices can be enjoyed, from mindful walking to group guided meditation to individual mindfulness practices.

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# UK Sustainability Challenge Grants Project in Progress



## Aerated manure compost facility for the smaller horse-farm operation

Manure composting is one environmentally responsible way that horse farm owners can manage waste. The goal of this project is to construct a cost efficient, aerated, manure composting facility that can be replicated or adapted by small horse farm (<6 horses) owners.

### Meet the Team



Mieke Holder  
Animal and Food Sciences



Morgan Hayes  
Biosystems and Agricultural  
Engineering



Robert Coleman  
Animal and Food Sciences



Laurie Lawrence  
Animal and Food Sciences



Jamie Dockery  
Horticulture & Fayette County  
Cooperative Extension



Ashley Fowler  
Animal and Food Sciences



### A Living Learning Lab

The composting facility will be located on the Department of Animal and Food Sciences' Maine Chance Horse Unit (North Farm), enabling faculty to use the facility as a hands-on learning experience for undergraduate classes related to horse facility design and management.

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**UK Office of Sustainability  
Tracy Farmer Institute  
for Sustainability  
& the Environment**

**President's Sustainability  
Advisory Committee**



# Appendix C



W H O L E S U M

WholeSum is the University's newly-launched sustainability platform, designed to be "a hub for news, information, and discussions on sustainability issues for students, faculty, staff and the community." Content on this website is intended to address the three "R's" most environmentalists know and love (reduce, reuse, recycle) alongside three new R's that convey the social responsibility inherent in sustainability: **rapport, renewal, and resiliency**.

Sustainability Challenge Grant teams are now able to leverage this versatile platform to engage the public in their projects and to discuss results.

Since its launch in April 2021, WholeSum has hosted 14 articles on 10 unique Sustainability Challenge Grant projects, with more scheduled for publication in Spring 2022.

- [1. Meet the Team Turning Plastic Waste into Fuel Oil](#)
- [2. Turning Plastic Waste into Fuel](#)
- [3. I Wish I Didn't Like Plastic](#)
- [4. Innovation and Sustainability in Kentucky's Forests](#)
- [5. Composting Manure on the Smaller Horse Farm Operation](#)
- [6. UK Project Tackles Student Mental Health and Sustainable Landscapes](#)
- [7. Preparing our Urban Forests for our Changing Climate](#)
- [8. Evaluating Twenty Years of Urban Reforestation in Lexington](#)
- [9. Farm-to-Fork: UK Students Share Nutritious Food With Peers](#)
- [10. Project CARAT Meets Critical Needs for Kentuckians with Disabilities](#)
- [11. Student Innovators Participate in Carbon-Neutral Energy Research](#)
- [12. Sustainability Grant Winners to Focus on Climate Crisis, Recovery, and DEI Efforts](#)
- [13. Apply Now! \\$200,000 Available for UK Sustainability Challenge Grant.](#)