Sustainability Internship Program
Urban Forest Initiative
University of Kentucky
Amanda Williams

For the 2015-2016 academic year I had the pleasure of being the Urban Forest Initiative (UFI) intern as part of the Sustainability Internship program at the University of Kentucky (UK). It was an incredible experience that helped me grow as a student, person, and engineer. The skills and knowledge I have acquired as a result of this opportunity will follow me through graduation and well into my future career. Throughout this internship, I promoted the goals and missions of the Urban Forest Initiative assisted my mentor, Nic Williamson, with his UFI work, and developed and will continue to implement my independent project. I will delve into these aspects of my internship more thoroughly in the following report.

Founded in the fall of 2014 by Dr. Mary Arthur, Dr. Lynn Riske-Kinney, and my mentor, graduate student Nic Williamson, the Urban Forest Initiative is a Tracy Farmer Institute for Sustainability and the Environment (TFISE) working group comprised of UK students, UK faculty & staff, and other members of the Lexington community who have a rooted interest in urban forests. An urban forest is a collection of trees that grow within a city, town, or suburb. It is the mission of the Urban Forest Initiative to "advocate for and elevate the function, value, and perception of urban forests in the Bluegrass Region."

I have been fortunate enough to work on several projects with UFI that accomplish this mission. One of the most exciting projects that I've worked on has been helping UK reach Tree Campus USA status. "The Tree Campus USA program helps colleges and universities around the country establish and sustain healthy community forests. In order

to be designated as a Tree Campus USA campus, a university must meet the following five standards:

1. Campus Tree Advisory Committee

2. Campus Tree Care Plan

3. Campus Tree Program with Dedicated Annual Expenditures

4. Arbor Day Observance

5. Service Learning Project

I aided with Standard 5 – Service Learning Project by creating and implementing a bi-annual service event called Mulch Madness. Students, faculty, and members of the Lexington community come out and mulch using shovels, wheelbarrows, and mulch provided by the Physical Plant Division (PPD). The fall edition of Mulch Madness was held on Thursday, October 8th. Because the event was still a learning process for everyone involved, we only had about 30 volunteers and were able to mulch half of the trees around William T. Young Library. However, the spring edition of Mulch Madness brought over 50 people out AND we were able to mulch every tree surrounding Willy T.

Overall, I think the event was extremely successful and I can't wait to see how it grows in future years. For more information about the Tree Campus USA, visit www.arborday.org/programs/treecampususa/.

UFI hosts an Urban Forestry Seminar Series – where urban forestry speakers from around the US give presentations to the Lexington community. We were fortunate enough to have speakers from as far west as Washington, and as close to home as Louisville. I tabled and set up at these and other community events, such as Reforest the Bluegrass and Arbor Day, for UFI and was also given the opportunity to be on GreenTalks Radio Show on WRFL with one of the speakers.

In addition to tabling for UFI, I also helped promote UFI's Adopt-A-Tree Program. This program has a great deal of value – what I really like about it is that its pertinent to young and old alike. The idea is that the adoptee chooses his or her favorite tree in the Lexington community, writes a narrative about why he or she chose the tree, identifies the species, measures the diameter at breast-height (DBH), and then plugs that information into the National Tree Benefits Calculator which then generates the benefits the tree provides such as carbon dioxide ($CO_2$) reduction, energy reduction, and rainwater filtration. More information about UFI's Adopt-A-Tree Program can be found at ukntrees.ca.uky.edu/adopt-a-tree.

I also created a Twitter for UFI (@UrbanForestLex) in addition to managing our Facebook page (@Adopt-A-Tree Lexington). The Facebook page is an outlet to highlight people who adopt trees and both the Twitter and Facebook page host tree-related stories and events.

As a requirement of the internship, each intern must create and develop his or her own independent project that directly contributes to sustainability at UK. I admit, this was a source of quite a bit of stress and frustration during the beginning months of the internship. At first, I was convinced I was going to create an interactive "Adopt-A-Tree" phone application (app) that contained a database of all UK trees and would display the trees that have already been adopted as well as those who had not. I saw the app walking the user through the steps of the Adopt-A-Tree Program. After realizing I had no such skills to develop an app, it was suggested that I further the work being done on UFI's in-progress interactive tree map, however, I wanted my independent project to be something I was more passionate about.

Towards the end of October 2015, I was walking (my bike tire was flat) through campus gazing at the trees when I thought to myself "it would be really awesome if I knew what kind of trees these are." And thus the idea of a Tree Walk was born. People see and interact with trees on campus every day whether they know it or not – my goal with the tree walk is to educate those who come to UK on the importance of trees and their impact on sustainability. Trees are economically important – using the National Tree Benefits Calculator a dollar amount can be placed on the ecological benefits trees provide. Trees are socially important – they provide city dwellers with a connection to nature, a sanctuary of green for people to come together and get in touch with their roots. Trees are environmentally essential – they sequestrate $CO_2$, filter rainwater, provide habitats to countless animals, birds, insects, and much more. Education is key if we want to save trees and forests for generations to come, which is where I hope my signs will come into play.

From then on, I began doing research on tree labels and discovering whom I needed approval from to make this happen. I was initially pointed in the direction of Todd Rounsaville, Native Plant Curator at the University of Kentucky Arboretum. He told me of their previous method of tree marking, shown on the left below, and their current method, seen on the right below. The Arboretum has recently purchased their own laser engraver to make their labels. At the prices Todd relayed to me, I knew I wouldn't be able to come up with that kind of funding. In addition, the new tags are hard to see unless you're standing right next to the tree.



Todd obviously knew his stuff – he gave me a variety of information including pros and cons about various sign types (attached to the tree vs. in the ground) and also suggested I highly consider the possibility of vandalism while making my decision. He also pointed me in the direction of Lark Label, the company I chose to order from in the end.

In addition to seeking help from Todd, I also reached out to Dr. Eric Wiseman of the Urban Forestry and Arboriculture department at Virginia Tech (VT). VT has an incredibly

developed urban forestry program and unlike UK has its own department dedicated to it. Similar to UK's online tree database located in Arbor Pro, VT has also mapped out all of their trees on campus. While all 56 of the trees in Tidewater Arboretum are labeled, none of VT's trees on main campus received a sign. Through several emails back and forth with Eric, I learned that they used a company called Plants Map – an online organizational garden tool and interactive plant tag shop. Virginia Tech chose to affix their tags to the trunk of the tree in order to deter theft. After conducting my own research on Plants Map, I determined that their labels were too expensive – their signs also came with a rather large "Plants Map" logo that I was not a huge fan of. I also looked into what the University of New Mexico had to offer. As you can see below, their arboretum chose to place their labels in the ground.



I knew that I wanted to avoid this sign type because Todd had early regaled me with the nightmare of theft he had experienced with the UK Arboretum's prior signs.

Now that I had collected research, it was decision time. After doing some online research, I chose Lark Label – the company Todd had suggested – based out of Kansas. While looking over their website, I determined this was the company I wanted to use –

their signs were inexpensive, professional, and without their logo. After examining their cost structure, I decided to label 50 trees with their common name, botanical name, native range, the UK logo, and a QR code linking to additional information about the tree as well as a fun-tree-fact related to the species. I then reached out to Lark Label for a quote and received this in return:

**LARK LABEL**                                                   **U of KENTUCKY 5 X 3**



Layout information for these markers.

Produce on 5" x 3" x .040" nameplates

Common Name: Arial font, 28 point, centered
Botanical Name: Arial font, 20 point, Italicized, centered
Origin: Arial font, 20 point, centered
Logo: Lower left corner
QR code: Lower right corner

I am full size, print me out then stick on a wall. Stand back 6 to 8 ft away and see how I look.

| Description | Quantity | Price EA | | TOTAL |
|---|---|---|---|---|
| 5" x 3" x .040" Classic Tree Marker with springs and screws | 50 | $ 11.95 | $ | 597.50 |
| QR code & logo graphic intense | 50 | $ 3.00 | $ | 150.00 |
| | 50 | | | |
| | | Shipping | $ | 17.95 |
| | | Taxes | $ | - |
| **Quote good for 90 days** | | TOTAL | $ | 765.45 |

Pay by Check or call us with your Visa/Mastercard

120 Old Manor                                                    316.682.5275
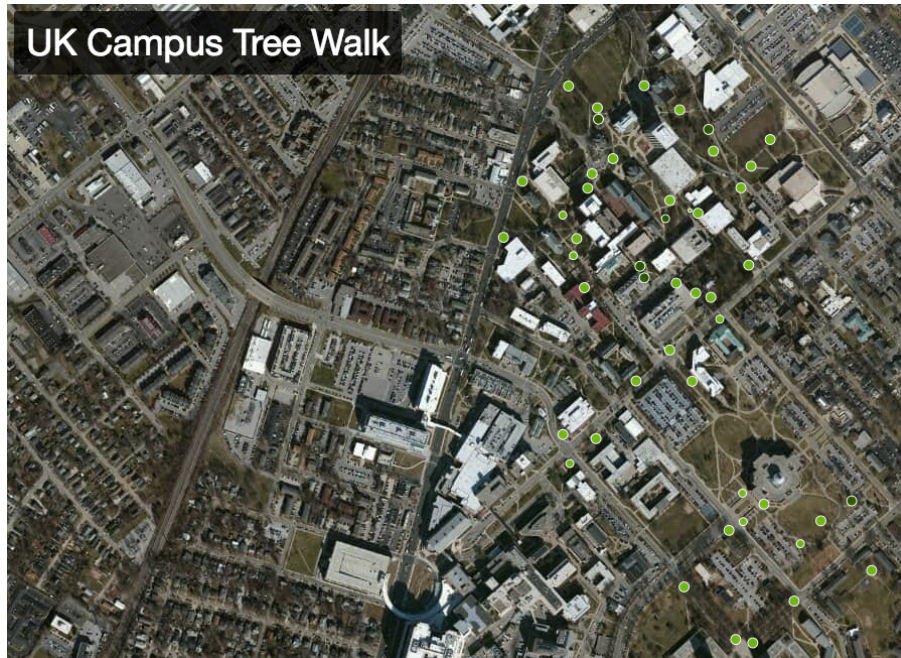Wichita, KS 67208                                              www.larklabel.com

At this point it was the beginning of February and time to get approval. I had to obtain the backing from UFI and present my project to them – after some debate they were very supportive and were able to fund $200.00 of my project. In addition, I compiled a presentation that Shane Tedder, Sustainability Coordinator, presented to Mary Vosevich, VP of Facilities Management – she also approved and suggested that this be only the start of an ongoing project to label trees. Another key person involved in this and many other UFI projects is Jerry Hart, Superintendent of Campus Grounds, or the "keeper of the trees" as some people put it. He too gave his support.

Next came the important part – procuring funds. I knew exactly where to look – the Student Sustainability Council (SSC). The SSC is an organization on UK's campus that decides how to use the $3.50 environmental stewardship fee that each student pays in his or her tuition. I submitted an application to the SSC requesting $565.45 and was approved.

Then the difficult part came about – choosing the trees. I wanted the signs to be at eye level and in areas of high traffic (intersections of pathways, frequented green space, etc.). I also wanted the tress to follow a cohesive path throughout campus and highlight the

large and unique trees UK has to offer. After several walking trips around campus with Nic

and the other UFI interns, we had the trees selected. See below for a map of the chosen

trees (green dots represent trees)



It was now the middle of March and time to order (or so I thought). My original hope was to

have the signs up during Earth Month, so that I could do some promoting of the program.

However, we hit a snag. During the time I was designing the signs, the UK logo was under

review and changed recently before I wanted to order. Therefore, I had to get a new proof

from Lark Label and once again seek approval from Facilities Management. Unfortunately,

my correspondent at Lark Label didn't get back to me with a new proof until May 12th (the

day before this report was due). So once I receive approval, I will order. I was fortunate

enough to be hired by UFI in the fall, so that is when I will be placing the signs on the trees.

For the conclusion of this report, I'd like to thank everyone who impacted my

internship and made it a great year! Thank you to the TFISE and the SSC for funding the

internship program! Thank you to the SSC and UFI for funding my tree labels! Thank you to

Shane Tedder for orchestrating this whole thing. Thank you to my fellow interns – it has

been a ton of fun getting to know you all! Thank you to Dr. Mary Arthur and Nic Williamson

for encouraging me, pushing me, and helping me whenever I needed, I'm extremely

thankful that I was chosen to be the Urban Forest Initiative intern and wouldn't have had it

any other way!

<div align="center">Bibliography</div>

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