



# BRANCHING OUT

EXPANDING YOUR CAMPUS' URBAN TREE PROGRAMS





## THE URBAN FOREST INITIATIVE (UFI)

UFI is a collaborative group of faculty, staff, and students from the University of Kentucky; professional organizations; local, state, and federal governments; and Lexington community stakeholders, all with an active interest in enhancing the urban forest. This organization has championed the perception, value, and function of the urban forest on campus and beyond since 2014. Its members have achieved significant and positive impacts on the public's awareness of, and active involvement in, the support, care, and expansion of the local tree canopy.



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# INTRODUCTION

## Purpose of this toolkit

This toolkit was created to assist university and college faculty, staff, and sustainability coordinators in enhancing their campus and community environmental well-being, through student involvement and engagement with the tree canopy. We hope that by using the ideas and resources in this toolkit, the connection between trees and environmental sustainability will be more widely embraced on college campuses across Kentucky.



## Importance of the campus tree canopy

Trees are contributing to your classroom and school whether or not you've considered it. Trees not only provide numerous ecosystem benefits, but also are vitally important for our mental well-being and creating a healthy learning environment. Being near trees, even just seeing them out a window or in a picture, can be calming and healing, both pre-requisites for effective learning. The in-between spaces, like walking to class or waiting for a bus in the shade, are where trees are often silently providing benefits. For some, incorporating our classroom experiences into our lives is made possible through spaces in which trees are a living and important part.







# TOOLKIT SECTIONS

## Building a sustainable group of tree ambassadors

To advance urban forestry goals on your campus, it is valuable to have a strong network of faculty, staff, students, and organizations that care about campus trees. In this section we list potential on- and off-campus connections and ways that UFI equips current students with the skills needed to become stewards of the urban canopy.

## Using campus as a living-learning laboratory

Everyday encounters with trees on campus can be transformed into learning experiences. Hosting events, such as tree plantings and tree maintenance events, can lead a campus community to think more deeply about their relationship with the urban tree canopy. Conducting research with urban trees can further engage students with the trees around them.

## Connecting people and urban trees: Cross-disciplinary approaches

The interdisciplinary nature of urban forestry creates a need to form relationships across campus. This section details the ways UFI has used the intersections of urban forestry with human health and history in their programming, as well as how to involve faculty and students across sectors.

## Establishing a presence: outreach that engages students and community

Social media, tabling, and outreach materials are powerful tools for building community and spreading information. This section provides suggestions for using these tools to engage your audience.

# BUILDING A SUSTAINABLE GROUP OF TREE AMBASSADORS

IN THIS SECTION...

Campus &  
community  
partners

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Training tree  
ambassadors

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Adopt a Kentucky  
Tree Program





# CAMPUS & COMMUNITY PARTNERS

## Valuable on-campus partners

- Campus grounds department or facilities management
- Environmental clubs and student organizations
- Interested faculty across disciplines (biology, forestry, entomology, nursing, design, etc.)
- Campus sustainability coordinator or equivalent

## Valuable off-campus partners

- City, state, and federal entities engaged in urban forestry
- Environmentally-focused non-profits & other organizations
- Enthusiastic community members
- Local K-12 schools
- Cooperative extension
- Nursery, landscaping, and tree care businesses



Establishing a group of campus and community partners is an excellent way to advance urban forestry engagement. This is a great first step to enhancing urban forestry programming on your campus.



Working groups can be created for such purposes as well. For example, UFI has a working group that convenes every two months during the school year to discuss what individuals and organizations are doing in support of the tree canopy. These meetings lead to synergies among group members that enhance projects and encourage collaboration.



# TRAINING TREE AMBASSADORS ON CAMPUS & IN THE COMMUNITY

One approach to UFI uses to train tree ambassadors is through a program called **TreeCATs** (Collegiate Arborist Trainings). This program equips students with foundational knowledge in urban and community forestry and is a valuable way to expose students across majors to the field.

## TreeCATs program details

- Topics can include tree identification, health assessment, pests and disease, mapping, and tree maintenance.
- Participants receive hands-on experience using professional urban forestry tools and software to conduct tree inventories.
- The program identifies potential pathways for students interested in arboriculture-related and urban forestry careers and fields of study.
- Outstanding members may later be awarded summer internships to continue championing trees through tree inventory and education.
- Students receive a stipend for completing the 20 hour TreeCATs training, which typically takes place on Saturdays during the semester.



TreeCATs at UK establishing a neighborhood presence through a workshop on tree care and benefits





# CREATING AND EMPOWERING TREE AMBASSADORS

## Intention

- To implement strategies that engage students on campus and encourage them to be stewards of the urban canopy
- To educate community members on tree health and to provide information regarding the status of their neighborhood's urban canopy

## How to do it

- Work with on-campus partners to create the program content.
- Check if existing courses at your campus (e.g., dendrology or plant physiology) can be tailored to fit the urban setting.
- Consider working with your grounds department to create opportunities for hands-on training.
- An excellent interdisciplinary project for tree ambassadors is tree inventoring. Data taken from campus or local neighborhoods can be mapped and compiled into reports showcasing tree species and size composition, ecological benefits, and tips for enhancing the canopy.



# ADOPT A KENTUCKY TREE PROGRAM

Developing an **Adopt a Kentucky Tree program** is a great way to help others acknowledge a tree that has enhanced their quality of life and increase their awareness about the many benefits trees provide.

Adopting a tree is a simple process, involving 1) finding a tree, 2) measuring the tree's diameter, 3) using an online calculator to discover the tree's ecological benefits, and 4) sharing your findings and what you love about your tree.

## Intention

- To encourage an individual or group to join a community of treekeepers who recognize the benefits and beauty that trees provide
- To engage students in a way that allows them to form a closer relationship with the world around them. Students will learn more about their favorite tree and be able to share what they love about it!

## How to do it

- Adopting a tree can be done individually or in a group. This process can be introduced in relevant college classes and clubs.
- You will need to create a webform for adopters to enter their tree data as well as outreach materials detailing the process.
- View UFI's webform and materials at [ufi.ca.uky.edu/adopt-a-tree](https://ufi.ca.uky.edu/adopt-a-tree)







# STUDENT ORGANIZATIONS FOCUSED ON CAMPUS TREES

**Student organizations** focused on campus trees, such as an urban forestry club, can be valuable for engaging the campus community. They could partner with members of your organization to host lectures, service opportunities and other events. Student voices are powerful, so harness them when working to maintain our urban tree canopies!

## Intention

- Enact positive change on campus by promoting tree care and protection
- Broaden your organization's impact on campus by building a community of students who are passionate about urban trees
- Create a campus culture of sustainability that values the tree canopy



## How to do it

- Students will need to initiate the formation of a student group, but faculty and staff can help facilitate the process by providing resources, guidance and partnership for an urban forestry club.
- Offer students data collected about campus trees, other resources, and the ability to table at urban forestry-related events.
- Advertise the club via flyers, social media, and email Listservs.
- Assist members with developing a mission statement, goals, and events for the upcoming semester.

# USING CAMPUS AS A LIVING-LEARNING LABORATORY

IN THIS SECTION...

Mulching  
Projects

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De-mulching &  
Watering

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Tree Planting  
Projects

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Research

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Interactive  
Tree Map

UK Interactive Tree Map





# MULCHING PROJECTS

**Mulching projects** engage the campus and community to promote tree and soil health. These events educate participants on tree care and can be a fun community-building exercise for students and neighbors.

## Intention

- To enhance tree health through mulching and educate about the benefits mulching provides to trees
- To actively engage the campus community, promoting camaraderie and building a sense of place



## You will need:

- Permission
- Volunteers
- Location with plants that need mulch
- Mulch
- Means of transporting mulch to site
- Cardboard
- Wheelbarrows
- Space to place mulch pile
- Rakes
- Shovels
- Water
- Snacks

## How to do it

- Work with your grounds department to identify a location, date, and approximately how many volunteers you will need.
- Reach out to student organizations and classes on campus, and advertise the event via social media and flyers.
- Partner with other entities to secure materials for the event.
- Ensure volunteers are taught how to properly mulch at the beginning of the event, as improper mulching can compromise a tree's health.



## Securing materials

- Arborists typically generate a lot of mulch through tree pruning and removal, and are often able to give it away for free. Consider developing a relationship with your local or campus arborist.
- Mulching events can occur on campus or in a community setting. If the event is on campus, it is likely that your grounds department will have mulch and tools they can provide. If the event is at a community setting, partner with the city to secure tools, such as rakes, shovels, and wheelbarrows.
- Consider using cardboard as a first layer to eliminate competition from weeds and grass. Source clean cardboard from campus bins and recycling centers (have volunteers help remove tape and staples).

## Securing volunteers

- Mulching events allow students to engage in teamwork and exercise, as well as spark excitement about trees. Ask faculty partners to consider offering class credit for on-campus mulching events.
- Connecting with on-campus service organizations is a great way to find volunteers for mulching events. Build a relationship with these organizations by consistently inviting them to participate at your events.

## What makes a good mulching location?

- Visible space with potential for community involvement
- Adequate number of trees that need mulching
- Iconic trees and prominent locations are nice, but not essential
- Room for parking

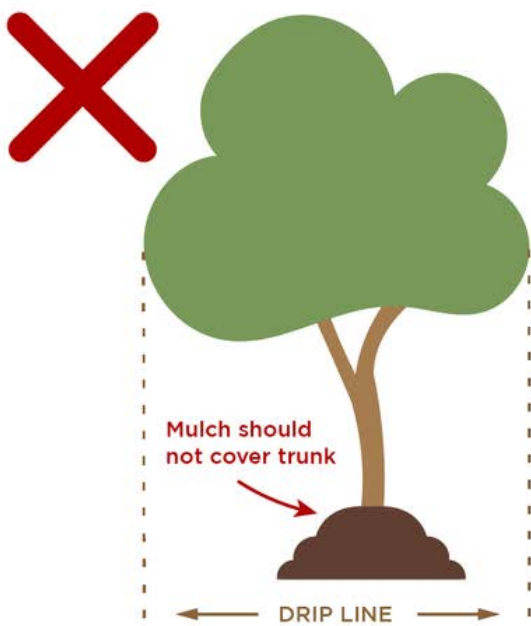




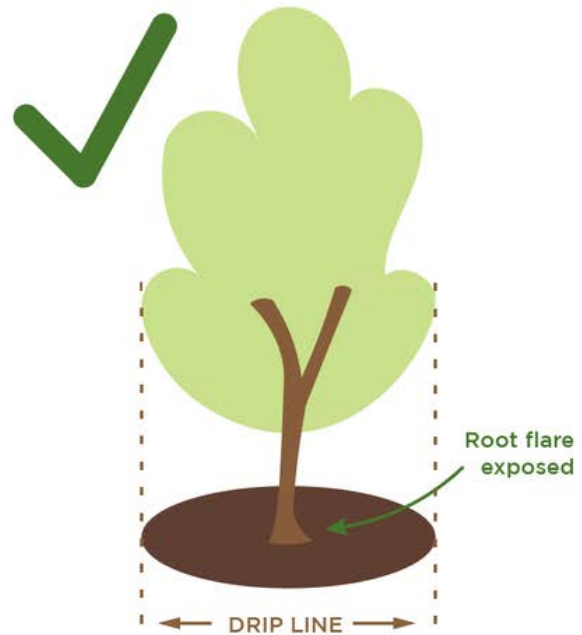
## Proper mulching will...

- Be spread evenly at a depth of 3-4"
- Start a few inches away from the trunk (no mulch volcanoes)
- Be spread to the drip-line, if possible

### NO MULCH VOLCANO!



### PROPER MULCHING



Never pile mulch over the trunk into a "mulch volcano."  
This can cause rot issues and damage the tree.

Graphic credit Live Green Lexington

# BEYOND MULCHING

## De-Mulching

- Another service event to consider is de-mulching trees.
- Mulch applied improperly can harm trees. Mulch "volcanoes" can cause rot issues and lack of oxygen to a tree's roots.
- A de-mulching event is a simpler project to initiate, as you will not need mulch or larger tools. You will need gloves, hand trowels, and trees that were improperly mulched. Soil knives, small serrated knives used to cut through roots and soil, can be used to remove girdling roots.

## Watering

- Newly planted trees need: 1) to be watered immediately following planting, 2) an inch of rain (or manual irrigation) every week while their leaves are present, and 3) to be sufficiently watered for the first three years after planting.
- Mature trees should be watered weekly during a drought.
- You can use a rain gauge or foil pan to check weekly rainfall, or simply look up rainfall amount for your area online.
- Generally, if it hasn't rained in a week and there is no rain in the forecast, a newly planted tree needs to be watered!
- When watering, remember that the majority of any trees' roots are no deeper than 18 inches in the soil.
- If there are newly planted trees on your campus, coordinating a watering event can keep your trees healthy and serve as a teaching opportunity.





# TREE PLANTING

*"The best time to plant a tree was twenty years ago.  
The second best time is now." - Chinese proverb*

**Tree plantings** are a great way to get the campus community excited about urban forestry. A planting project could involve as little as one tree or many more, depending on availability of resources, space, and volunteers.

## Intention

- To improve your campus and community's urban canopy
- To create engaging, hands-on educational opportunities for participants

## How to do it

- Find a planting location: your college campus, a local school, a public park, or in your community. Work with your campus grounds department, school board, city, or neighborhood association to decide details such as sourcing trees, time for the event, species, and number of trees.
- Ensure there are people connected to the planting site that commit to caring for newly planted trees for up to three years.
- For the planting event, you will need volunteers, shovels, water, snacks, and at least one tree.





# RESEARCH

A **research project** can be an effective way to engage the campus community. When students are involved in campus tree research, it strengthens their sense of place as well as their understanding of, and respect for, the research process.

## Intention

- To use the campus tree canopy to generate data on urban and community forestry topics and help steer management decisions
- To engage students in research and understanding of the urban canopy

## How to do it

- When considering tree-related research opportunities on your campus, look for issues affecting management.
- Is routine tree watering an issue? If so, consider a research project evaluating tree bag watering versus manual watering, or pine versus hardwood mulches.
- Are student traffic patterns compromising tree health? If so, consider a research project evaluating colorful pavement paints versus traditional signage to steer foot traffic.
- Consult experts in your campus and community on subject matter, experimental design, data collection, and data analysis.
- Partnering with your campus grounds department can facilitate project development and implementation.
- Pairing research projects with service-learning opportunities or development of citizen scientists helps provide much-needed volunteers.





## Research Example: The Scale Scrub

- Honey locust (*Gleditsia triacanthos*) is a widely-used urban tree species in many places, including on UK's campus. Unfortunately, numerous honey locust trees planted in 2010 arrived on campus with undetected infestations of calico scale, a non-native tree pest.
- By 2017, scale infestations were causing extensive tree decline. The 'Scale Scrub' was developed, which involved enthusiastic student volunteers in physically scrubbing calico scale off infested honey locust trees.
- The project was designed to evaluate effectiveness of three treatments for suppression of scale populations, 1) insecticidal soap + scrubbing, 2) water + scrubbing, and 3) dry scrub (scrubbing alone) compared to 4) untreated controls.
- Additionally, pre- and post-assessments were conducted regarding the tree and pest knowledge of the student volunteers.
- The UFI Scale Scrub helped transform our campus into a living-learning laboratory and contributed to suppression of a pest infestation causing decline of some highly visible trees on the UK campus.
- Providing a mechanism for college students to engage in nature is proving critically important in students' emotional and physical well-being, and has become a major emphasis in UFI's work plan.

Link to article: [doi.org/10.1093/ae/tmz010](https://doi.org/10.1093/ae/tmz010)



# INTERACTIVE TREE MAP

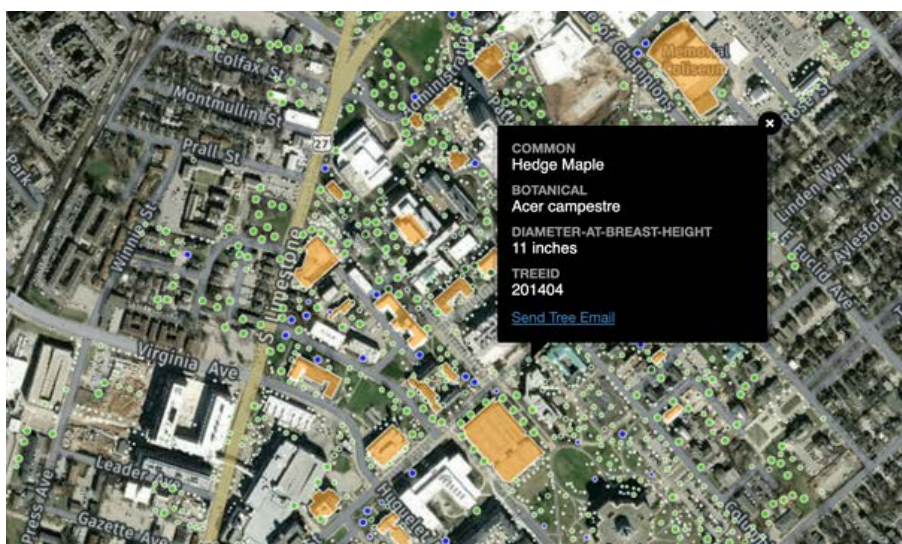
An **interactive map** can be used for tree management purposes and as an educational tool to help campuses identify their campus trees.

UK's Interactive Tree Map details all of the trees on campus using three layers:

- **Tree Locator**, where you can find basic information about trees, such as species and size; here you can report tree damage or simply learn more information about the tree
- **Adopted Trees**, which tells you campus trees that have been adopted and the ecological benefits these trees provide
- **Tree Benefits to UK Campus Buildings**, which details the ecosystem benefits that trees will provide to campus buildings over the next 40 years

## How to do it

- If your campus has a pre-existing GIS database of trees, publishing it as an interactive map can support student engagement activities.
- For your campus to build a tree map, it is important to have someone proficient in tree identification and measuring, and someone with GIS skills.
- You may require access and training on specific data collection software, unless such resources are already funded at your school.





# SEMINARS

A **seminar series** brings experts on various aspects of urban and community forestry to your campus to give free public lectures. UFI's Seminar Series is widely advertised to attract a broad audience, with each seminar preceded by tabling from local organizations, discussion, and light refreshments.

## Intention

- To encourage conversation around a variety of urban and community forestry-related topics
- To facilitate connections between campus and community populations



Author Florence Williams giving a seminar in 2019 titled "The Nature Fix: Why Nature Makes Us Happier, Healthier and More Creative"

## How to do it

- Gather input from a broad set of interested stakeholders to identify topics and speakers of wide-ranging interests.
- Speaker presentations must be accessible enough to resonate with both an academic and lay audience.
- Look for expertise within different organizational units on your campus and surrounding campuses, and in your city.
- Campus units may have money allocated for events like this. There are a variety of funding mechanisms to explore, including small grants, sponsors, and donations.

# CROSS-DISCIPLINARY APPROACHES TO CONNECTING PEOPLE & URBAN TREES

IN THIS SECTION...

Human  
Health

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History

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Student  
Internships





# HUMAN HEALTH

## Nature therapy through tree walks

**Nature therapy** is the process of connecting people and trees to promote both human and environmental health. Interacting with the natural environment has been shown to decrease incidences of mental and physical illness. Additionally, developing a healthy relationship with trees leads to a higher likelihood of quality tree care.

This dynamic relationship between people and trees has the potential to cultivate a healthier environment and community. One way of engaging students in nature therapy is through meditative campus tree walks.

Influenced by research on forest bathing, campus tree walks were developed at the University of Kentucky through UFI. They are audio-guided and roughly ten minutes in length, ideal for a quick break from a busy day.

### To create walks for your campus, you will need:

- Access to a recording studio or equipment
- Physical tree markers
- Software, such as Photoshop, to generate a map of trees
- Knowledge of specific trees you want to highlight



Find UFI's tree walks online at [ufi.ca.uky.edu/walks](https://ufi.ca.uky.edu/walks)





## Creating a meditative tree walk

There are four main elements to a nature therapy script:

- **Grounding exercises.** This can most easily be facilitated through simple guided meditation, drawing the listener's attention to their body and breath. This act allows the participant to settle into a comfortable mental space. It is best to begin and end your nature therapy with this.
- **Cultivating sensory interaction.** Throughout the script, invite the listener to utilize all of their senses and to approach the trees around them mindfully. Call attention to small details about the trees, how the temperature feels, if they can hear the wind, etc.
- **Conveying scientific information in a subtle way.** The purpose of nature therapy is not to lecture the listener on taxonomy or biology, but to encourage a relationship between participant and tree. Share scientific information in simple ways, such as by calling the tree by its common name, pointing out distinguishing features, and calling on a few interesting facts.
- **Expressing gratitude.** Invite the listener to be grateful for all that trees do for the environment, for their health, and for the people they interact with. Gratitude helps to promote psychological health and allows the listener to associate positive feelings with the natural environment.







## Samples from UFI meditative tree walks

"You may notice that this tree has long, rough lines in its bark. Its tough skin helps it withstand harsh weather conditions. Its resiliency helps it grow strong and full - allows it to provide more and more benefits to its ecosystem. Recognize that this power resides in you, as well. While a strong tree may help develop a healthy ecosystem, a strong person can help to foster a thriving community. Each gallon of storm-water that this tree intercepts, just as each small act of kindness that you can do for others, works to create a beautiful environment. Reflect on this."

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"Imagine that you are in a forest. You are sitting on the soft earth beneath the canopy of hundreds of tall, strong trees. You can look in any direction, and all you can see is the lush, dark green of leaves and vines, and the hearty, dark earth tones of tree trunks and the soil covering the forest floor. Think about your body as a part of this landscape. You are just as much a part of this natural environment as the trees and wildlife around you. Just as we bring awareness to our bodies in our practice, we do the same with the trees around us. In this way, we can begin to feel more connected to the natural environment."

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"As you breathe in, focus on how the air you are breathing is from the trees. Slowly exhale, knowing your breath joins the atmosphere as a crucial ingredient for trees to also grow strong and beautiful."

# ENGAGING CAMPUS & COMMUNITY WITH HISTORY

Involving your campus and community with trees through **history** can be done through storytelling, presenting historic photographs, and drawing attention to memorial trees.

## Intention

- To deepen the relationships between people and the natural environment by looking back and engaging with history.

## How to do it

- Check if your campus has a special collections library or any tree-related historic images and documents. Bringing this information out of the archives is a great way to introduce community members to the past.
- Trees in historic photos often outlast building locations, and thus serve as great waypoints for locating yourself in an image from 100 years ago.
- Aerial images can be compared with freely available imagery (Google Earth, Bing, etc.) and these juxtapositions are a story in themselves.
- Consider creating a walking tour of historic memorial trees on campus.







American Sycamore  
*Platanus occidentalis*

# STUDENT INTERNSHIPS

**Internships** allow students to explore interest areas, develop professional and academic skills, and work with faculty mentors. Some noteworthy projects include the creation of tree labels on campus, development of K-12 curriculum with local organizations, summer tree health and tree care workshops, and development of a community mulching festival.

## Intention

- To develop the academic and professional individual, as well as promote the field of urban forestry in innovative ways.



## How to do it

- Internships can draw students from across disciplines to promote urban forestry. UFI has hosted interns from education, nursing, landscape architecture, engineering, and other majors.
- Internships can last a summer, semester, or academic year.
- UFI internships have primarily existed because of grants from UK's Environmental Stewardship student fee as well as UK's sustainability and environmental research institute. Seek similar sources of funding on your campus for the creation and maintenance of internships.

# ESTABLISHING A PRESENCE: OUTREACH THAT ENGAGES STUDENTS & COMMUNITY

IN THIS SECTION...

Social  
Media

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Tabling

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Other  
Outreach  
Materials





# SOCIAL MEDIA

**Social media** has grown into a powerful tool for building community. Social media can be used to promote events, educate community members, and stay connected to the work of other members of the urban forestry community.

## Intention

- To engage on- and off-campus communities and promote events
- To encourage connections through the use of social media

## How to do it

- Determine the best social media platforms for your organization. Different platforms support different kinds of content and have different audiences.
- Create informative and visually appealing content to promote events or to educate the public. Taking lots of pictures at events will help to create more vibrant social media visuals.
- Choose a tone. Some social media profiles use bright colors and light-hearted language while others aim towards more a professional voice. This will again depend on the audience you are aiming to reach.
- Follow and interact with other organizations that you partner with. Even “liking” and sharing other organization’s posts can develop stronger partnerships and increase your reach.



Sample UFI Instagram Posts



# TABLING

Social media is a powerful tool, but a face-to-face conversation can't be beat when it comes to forming connections. **Tabling** at campus events allows for your group to broaden its network by bringing interested communities to you.

## Intention

- To prompt important conversations among campus and community members that can lead to growth

## How to do it

- Find a good time and location. Search for opportunities where people are likely to be interested in what you have to say and have the time for a conversation. Events hosted by partner organizations are often very effective tabling opportunities.
- Ask permission. Most venues require reservations for tabling. Make sure you plan well in advance to secure a table at a popular location or large event.
- Gather materials. Tabling efforts will benefit from use of a tablecloth (preferably with your organization logo), posters and fliers highlighting your work, a contact information sign-up sheet, and things to give away.
- Try to be intentional with promotional items and connect them to the mission of the organization. An example of an UFI promotional item is a key chain with the UFI logo made from locally sourced invasive honeysuckle wood.
- Bring a positive attitude. Tabling can be fast paced and invigorating. Bringing a positive attitude will make you more approachable and enthusiastic about sharing the work of your organization.
- Reflect on the experience. Take time after each tabling opportunity and determine what went well and how to improve future tabling.





# OUTREACH MATERIALS

Flyers, postcards, videos, and other **outreach materials** can be very effective means of spreading information about your organization. Clean and informative promotional materials are crucial for catching an audience's attention while tabling or using social media.

## Intention

- To create materials that engage digital and in-person audiences
- To use creative means to educate and inform about events

## How to do it

- Use programs like Canva, a free online design software, to make designing graphics more accessible. These intuitive programs can help even beginning designers make visually appealing and informative graphics.
- Don't be overly selective when picking places to hang posters or distribute fliers. There are people interested in urban forestry all across your campus and community!
- Consider incorporating videos into your social media and website. Modern cell-phone cameras often record in high enough quality to create engaging recaps of events, photo slideshows, or instructional videos.
- Though digital outreach can be incredibly effective, nothing beats in-person relationships when it comes to building a tree campus community. Outreach tools are best used to create partnerships across campus.

# OTHER GREAT TREE RESOURCES:

## Methods of Enhancing Urban Tree Programs

### **Tree Campus USA** -- [www.arboday.org/programs/treecampususa/](http://www.arboday.org/programs/treecampususa/)

*Description:* The Tree Campus USA (TCU) program helps colleges and universities around the country establish and sustain healthy community forests. TCU's strive to engage their student population with urban forestry service learning opportunities on campus and in the community.

### **Tree Are Good** -- [www.treesaregood.org](http://www.treesaregood.org)

*Description:* Trees Are Good provides the public with educational information about the benefits of trees and how to properly care for trees in the urban environment. The site contains resources from the International Society of Arboriculture, and also provides a collection of reliable tree care information provided by other industry organizations.

### **UFI website** -- [ufi.ca.uky.edu](http://ufi.ca.uky.edu)

*Description:* Visit the Urban Forest Initiative website to learn more about our programming, events, and partners.

