

Grant/Scholarship Award Recommendations:

Hyland Johns Grant

Dr. Jason Miesbauer, The Morton Arboretum, Lisle, IL

Project Title: Assessing Wound-induced Response Growth in Two Common Urban Tree Species

Request: \$25,000

Summary: Healthy trees are able to alter the amount and physical qualities of new wood produced in order to compensate for loads on branches, trunks, or roots. Current industry Best Management Practices and Tree Risk Assessment Qualification (TRAQ) training materials highlight the importance of response growth as a potential indicator of both tree weakness and compensation for that weakness. Despite an emphasis placed on this latter role, both references acknowledge that the industry has few guidelines for evaluating the impact response growth in compensating for structural defects such as injury and decay. This project will build on past research, assessing trunk strength for live oak (*Quercus virginiana*) and pin oak (*Quercus palustris*) trees intentionally wounded at various levels. In contrast with past works, our treated trees will be left to respond to the intentional wounding inflicted upon them. The progression of decay, wound response, and their impact on mechanical strength will be measured with time over a 5 year period. Results will be used to better inform risk assessments which follow the ISA Tree Risk BMP/Tree Risk Assessment Qualification recommendations.

Dr. Andrew Hiron, Myerscough College, Lancashire, UK

Project Title: Improving urban forest establishment, resilience and performance using trait-based tree selection

Request: \$24,930

Summary: Trees enrich urban environments through their provision of a wide range of ecosystem services. However, the contribution trees make is proportional to the health of the individual tree and the urban forest as a whole. Impoverished growth environments, high mortality rates and poor species diversity act to diminish the ecosystem services provided by trees and make the urban forest vulnerable to a future climate scenarios.

Professionals tasked with securing the future of our urban forests will be greatly aided by robust selection guidance on tree species and cultivars. Plant traits relating to the tolerance of water deficits will be of particular value since water deficits frequently perturb tree development in urban environments and lead to early tree mortality. For example, the leaf water potential at turgor loss (Ψ_{P0}) provides a robust measure of a plant's ability to survive low water availability since a more negative Ψ_{P0} allows the leaf to maintain physiological function over an increased range of leaf water potentials. A

recently established relationship between the osmotic potential at full turgor ($\Psi_{\pi 100}$) and Ψ_{P0} provides an opportunity to rapidly assess the tolerance a species (or genotype) has to water deficits. Using a novel approach, this project aims to develop quantifiable trait-based guidance that can be used by arboriculturists, urban foresters, landscape architects and tree nurseries to help establish a resilient urban forest for the future.

Results will be shared across a broad range of key professional communities via journals (including, Arboriculture and Urban Forestry), conferences, seminars and e-learning resources.

Arboriculture Education Grant

Toledo Botanical Garden

Project Title: From TREES to STEM!

Request \$5,000

Summary: With these funds we will partner with an inner city school system of 400 students. We propose to provide each grade level with a field trip to TBG and a follow up school visit. During the 1/2 day field trip students will explore sites on our 60 acre campus to learn about the arboriculture practices we use and to be introduced to a grade level science concept. A follow up in-school activity will enhance the science concept AND underscore the principals of arboriculture and urban forestry. Using the following outline we will tie Ohio science requirements to age appropriate principals of arboriculture. Kdgt- (Ohio Core Concept) Living things respond to stimuli and plants make their own food. Gr 1 - Living things use the environment to acquire what they need to survive. Gr 2- Interdependence of living things. Gr3- Food webs and energy transfer. Gr 4- Decoding the Earth's history .Gr. 5- As environments change so do organisms that survive. Gr 6-. All organisms are composed of cells. We are very excited about the "scavenger hunt" exploration we hope to develop for this purpose. Our horticulture staff has brainstormed with our education department to identify places on the campus demonstrating selection, training, pathogen control, pruning, shaping and fertilization used with our trees, shrubs and vines. Students will follow maps on Ipads to find then photograph the locations and determine which management practice was being used. Emailing the photos to the classroom will reinforce learning.

Forest ReLeaf of Missouri

Project Title: Forest ReLeaf in the Classroom

Request \$5,000

Summary: Forest ReLeaf in the Classroom is a hands-on interactive program teaching students about the many benefits trees provide and developing tree stewards in the process. Four levels of lesson plans: K-2, 3-6, middle and high school have been developed and will be taught by a trained docent/educator to present the 45-60 minute

program. In addition to basic biology and environmental impact lessons, emphasis will be placed on the social and community benefits. Special “forest trunks” will be brought into the classroom with level-specific items for hands-on activities teaching students about the integral role trees play in our daily lives. Examples of some of the materials include a rain gauge, blood pressure cuff, clinometer, tree cookies, binoculars, bag of acorns, Frisbee, dollar bill, mood surveys, and tree journals. A special tree benefits board game has been created to reinforce the knowledge. Docents will leave behind suggestions for extended lessons and a “coupon” for a free tree from Forest ReLeaf for spring or fall planting.

Ohio Chapter ISA Education Grant

Cuyahoga River Community Planning

Project Title: Tree Training Intensives

Request: \$5,000

Summary: We propose to present three full-day workshops, one in each of three Great Lakes Areas of Concern - the Cuyahoga River AOC (Cleveland/Akron,) the Black River AOC (Lorain,) and the Maumee River AOC (Toledo.)

Target participants will include:

- Tree commission members from communities throughout northern Ohio, to provide them with the basic knowledge and tools necessary to be effective tree stewards in their communities;
- Students age 16 and over, to engage them in the art and science of urban forestry and encourage entry into the arborist profession; and
- Municipal employees, to provide them with training related to the use of trees and tree canopy as effective stormwater control measures for their MS4 municipalities, for which they would receive credit in their cities' NPDES Phase II stormwater reporting.

The workshops will be held at Cuyahoga Community College, Lorain Community College, and the University of Toledo, so as to involve students from these schools and surrounding high schools.

Each workshop will include three parts:

1. A half-day intensive version of Ohio DNR's Tree Commission Academy, focusing on how trees function in general and relative to urban settings; tree choice and tree plans; support and maintenance.
2. A session on what professional arborists do and how they support and maintain urban forests on public and private lands.

3. Hands-on exercises involving riparian buffer planning and planting, and a health-identification survey of trees on the venue property with an introduction to i-Tree tools to assess the benefits of the surveyed trees.

Robert Felix Memorial Scholarship

3 recommendations at \$3,000 each

Brady Hendricks, Kansas State University

Essay: Ever since a young age, I have had a passion for working in the outdoors. Growing up, my grandfather and my father and I worked together to operate a small lawn and tree business for a handful of customers. I have many positive memories working with my family and I am thankful for the opportunity it presented for learning the importance of having a hard work ethic. I also learned about myself— I learned that working with my hands to beautify the environment is something that I am passionate about. This family business has continued into my college years, and I still love to work for my clients in my free time. I enjoy having the opportunity to practice being “the boss” who deals with company issues and customer service. Having this knowledge and experience encouraged me to pursue a degree in horticulture at Kansas State University.

I am currently a junior in horticulture at Kansas State and I am blessed to be a part of their program. Upon taking my first class in horticulture, I quickly realized that this program was going to be a great fit for me. Not only did my schooling experience become more enjoyable as I learned about the things I was passionate about, but also the faculty and students were genuine and relatable. We all shared a passion for our industry, and I became even more excited about learning and working in the horticulture industry. During the spring semester of my sophomore year, I took an arboriculture class in which I realized that trees are my passion. I learned about the details of the physiology of trees and about the benefits trees offer to humans and the environment. When we learned about tree climbing, I found it very natural for me to understand the concepts of moving throughout the tree. Taking the arboriculture class opened up my mind and presented new opportunities for me and helped me decide that arboriculture is the direction I want to go with my career.

After having experienced the arboriculture class, I decided to apply for a job with a local arborist. Having operated a small business of my own, working for another company has given me a perspective on the industry from an employee standpoint. I have learned the essentials of working in the tree industry; things like pruning, tree removal, cabling, climbing, and equipment safety techniques. During my time with Hummel Tree Service, I have learned a lot about the tree industry, and it has been affirmed that trees are really what I am passionate about and therefore, my long terms

goals are to work in the tree care industry. Through it all, I have learned that this is what I want to do with my professional career.

Just as college has helped me to explore my passion for trees, it has also been a way for me to realize how much I love helping and serving people. My goals for wanting to work in the tree industry reflect my passions. Upon graduation I hope to become established in a residential tree company that allows me to use my skills as an arborist as well as to provide me the opportunity to work with customers and help meet their needs. I hope to use my first few years in the industry to gain experience and learn as much as possible about this industry. During this time I also plan to get married and explore possibilities of using my skills in the mission field.

I believe I am a good candidate for this scholarship because I have a lot to offer to this industry. I not only am amazed by trees and the role they play in our world but I also desire to offer my talents to improving the arboriculture field. As a member of the KSU Horticulture Club, I have had amazing opportunity to learn from the best within the arboriculture field. Not only is Kansas State's curriculum impressive, but I have been coached by current industry leaders such as Rip Tompkins and leaders of Davey Tree during the annual PLANET student career days. This past March at North Carolina State University my partner and I placed 8th out of over 40 participants in the Arboriculture Techniques competition, in the rain! Last year at Colorado State I competed in the snow and placed 12th.

This scholarship would also be very important in helping me accomplish my financial goals. As a student motivated by using my knowledge to serve a greater purpose, I aim to maximize my time in college. I see where I am at now as a time for personal character growth and responsibility. One way that I have been able to practice responsibility is by taking initiative in paying for my school costs. I can proudly say that I have been able to pay a majority of my way through school by my own efforts, which has allowed me to remain debt-free thus far. I see this as a priority for someone of my age as it offers a large degree of financial freedom upon graduation. With the help of this scholarship, I can meet my goal of remaining debt free upon graduation and I will be able to accomplish my goals.

From my first experience working outdoors with my dad to learning about horticulture and the tree care industry at Kansas State, I have learned so much about myself and my desire to work in the arboriculture industry has grown. I have had incredible opportunities to network and gain experience that have helped shape my future goals and aspirations for how I can use my degree to its fullest potential. I am so thankful for donors and scholarship funds like this one that invest in the future leaders of the industry. This scholarship would be a huge blessing for me and would be very influential in my life by allowing me to accomplish my goals. Thank you for your consideration.

Andrew Ronan, Paul Smiths College, MA

Essay: Have you ever had a door open up in your life that led to many hallways; providing you with a variety of different opportunities? My Arboriculture instructor in High School opened that doorway for me my sophomore year. He helped me find the diversity that life has to offer. My involvement in sports, student activities, FFA Arbor skill competitions, and student government, along with working under a local arborist during summer vacation and weekends, allowed me to connect with many people I wouldn't have otherwise had the opportunity to know. I am not only interested in becoming an arborist I am vested in becoming one. When I think back to what I learned in high school, I am amazed. I didn't just learn the material for a test; I acquired the knowledge of my instructor. I found myself falling more and more in love with the field the more I learned. After graduation, I was, and still am eager to learn as much as I can. Therefore, I decided to pursue a college degree in the field of arboriculture.

Right now I am a freshman at Paul Smith's College, located amidst the Adirondack Mountains in New York. I am pursuing my goal to become an Arborist. Although my state college offers an arborist program, the multiple times I visited the Paul Smith campus something just felt right there. It is hard to explain, but I felt like I wasn't moving away from my friends and family but joining a group that cared about my goals. Any college can give you an education, but it takes a special college to make you feel comfortable, save and happy along with giving you a great education. After being here for a semester, I am glad I made that choice. My major is Arboriculture, coupled with a Bachelor in Parks, Recreation and Facilities Management along with a minor in Business. I am a person who learned to grasp at all opportunities possible in high school, and therefore I am going to work hard to obtain the most while at college. I choose to follow my ambition to become an Arborist because of my experience at Bristol County Agricultural High School and my instructor there; who opened the doorway for me to find a career in a field I have grown to love.

Trees have become part of who I am. There is nothing like the beauty of a forest or even my own backyard while sitting in the top of a big Oak tree. I find myself looking in yards as I pass by and in the woods that surround my home with a whole different perspective than I use to. I now gaze at the beauty of a healthy tree, or find myself forming a plan for an unhealthy one. I spot an unusual ornamental or a tree I hadn't learned and find myself looking it up. Throughout high school, I learned how to identify 115 different species in their common and Latin names. We didn't learn by looking at pictures either, but by observing them on our campus and identifying each by their bark, leaves, and buds at various times throughout the year. I learned the proper way to operate a chainsaw, fell a tree or prune one, numerous climbing techniques, as well as the biology of trees, and so much more. You see, I am not a student just entering college with an interest in the field; I am a student that has been vested in our environments' most critical resource since I was fourteen.

By the time I was sixteen, I knew it was time to start investing for my future. I began by asking for only tree equipment for gifts from family. I worked full time on weekends and summers in the field and purchased more equipment. I volunteer to help thin and maintain forest land adjacent to my home in order to promote healthy growth and enable the wildlife to flourish. The land of which is part of the forestry program, sponsored by the Department of Conservation and Recreation in Massachusetts. By the summer of my junior year I was doing jobs for friends and family removing their trees, and pruning them along with working for a landscape company doing tree work.

My goal for after college is to obtain a position with a reputable tree care service. I take pride in my work and will only work for someone who does as well. It bothers me when I see trees trimmed along a road that have been not properly cut back in order to clear power lines. Looking further into my future, ten years or so, I think about using my business degree to open up my own business where I can give a young arborist like myself a place to start their career.

I believe I would be a good candidate for this scholarship because I am a person who works hard and is willing to push the extra mile to achieve my goals. I wish to learn all I can in a field that not only inspires me, but contributes to our environment and community's well-being. I am eager to learn and inspired to succeed. If I were to be chosen for this scholarship, the money would not be just going to someone's college education, but you'd be helping someone take another step towards their dream.

Lee Rumble, Middle Tennessee State University

Essay: For the past fourteen years, I have shown up to my aerial office located at heights nearing 100-feet. I am an International Society of Arboriculture (ISA) Certified Arborist, and I professionally climb trees for a living. Soils, plants, trees, and insects all excite and capture my attention. Since 2001, I have been self-employed alongside my family operating a tree preservation and tree removal company in Nashville, TN. We sought to change the face of arboriculture through education and the implementation of modern techniques.

Over a decade ago, I would never have expected to be in this role, but now I feel that it has better prepared my mind to become more absorbent of ideas about a field that I instinctively love. Plants never cease to amaze me, and that is why I have chosen to study them rather than chasing after a random career. By utilizing fourteen years of knowledge gained in the arboricultural field, my six-year arborist certification, a two-year horticulture degree, and a true love of plants and nature, as I now work to complete my B.S. in Plant and Soil Science, I know I will always be around work that can be educationally challenging, while remaining exhilarating.

My college career began at Nashville State Community College (NSCC) at the age of thirty, where I sought an A.S. in Horticulture. After graduating summa cum laude in May 2014, I discovered that while I had taken the scenic trail to college enrollment, I

was better prepared for my time there. Sound organizational work and life skills helped me to study and better understand educational concepts. It was also during this time, I began to help others and say “yes” more often. Soon, I was forming large study groups, I began volunteering with NSCC Green Sleeves club (a campus-based initiative for a more sustainable campus), Hands on Nashville, and I had enrolled in the Honors College at NSCC to begin my first research projects with professors.

Now, as a second-semester junior working to complete a B.S. in Plant and Soil Science at Middle Tennessee State University (MTSU), I have continued my goal of not only educating myself, but also, of helping others. At MTSU, I was admitted as 1 of only 15 Honors Transfer Fellows which requires full time enrollment, completion of an undergraduate thesis, and the continuation of honors courses throughout my degree. For my thesis project, I have chosen to survey tree wounding frequencies among trees found in urban and forested environments throughout ten sites in middle Tennessee. I seek to uncover whether exposure to anthropogenic activities reduces overall tree health. I have also continued my volunteer work, and joined the MTSU Plant and Soil Science club to remain active outside of the classroom. What I discovered is that helping others is actually offering me the greater benefit. For this reason, I plan to make full use of my skills and my education to continue to promote awareness, support, and recognition for the wonders of the natural world around us.

At MTSU, I am working to become a more knowledgeable arborist, horticulturists, and now, plant and soil scientist. I am learning not only about plants, but all of the symbiotic relationships that exist in our natural world. A degree in a field that is continually evolving interests me especially because it will best benefit those who have diversified their talents and are willing to adapt old thoughts into new techniques, just as our tree preservation company has done.

My educational endeavors have not been easy while continuing to work. I have life skills that were drawn out of necessity, and now education has become one of those skills. Having worked full time since the age of eighteen, as I entered MTSU, I had to make the difficult decision to enroll full time and reduce my working hours to 20-25 hours per week. My new routine has taken me to places that I thought were unlocked by financial gain, when in fact, they are unlocked from the personal hardships that I encounter as I progress through school by learning new things. The work is hard, but the sense of self-accomplishment is so much more enjoyable than any other form of reward that I have found. For this, I see no reason to stop learning now.