



Ray Lepore adding an observation to the Western Redcedar Parks Study in Point Defiance Park, Tacoma, Washington.

WSU Urban Forest Health Lab



2025 ANNUAL REPORT

Keeping trees and communities healthy



Established in 2023 through the generous support of the Albert Victor Ravenholt Fund.



WASHINGTON STATE
UNIVERSITY

treehealth.wsu.edu

WSU Urban Forest Health Lab



TABLE OF CONTENTS



-  **Message from the PI**

-  **Program Funding**

-  **Team Trees Updates**

-  **2025 Highlights**

-  **A Year in Review**

-  **Thank You**



Zay, Zarina, and Taylor isolating fungi from symptomatic plants in the Lab.





MESSAGE FROM THE PRINCIPAL INVESTIGATOR



hulbe@wsu.edu

2025 was shadowed with uncertainty, but our program, funding, and support held strong. In many ways, the changes happening around us helped us appreciate what we have. We feel our program was established just in time, and only because of seed funding provided by the Albert Victor Ravenholt Fund.

We started the year with much optimism and enjoyed celebrating the establishment of the lab during the board visit in February. Nearly a year later, we have even more to celebrate because of the extended support from the Fund and our strengthened vision for the program.

This year of uncertainty helped us build the most committed team, recognize the need to diversify our funding, and strengthen our dedication to serving society through urban forestry education, engagement, and discovery.

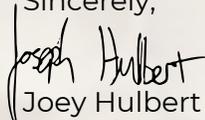
The uncertainty in the conservation landscape has helped us build the most committed team. Conservation jobs are harder to find and our team is highly appreciative of the opportunities we have. We navigate the uncertainties as a team and work together to deliver and sustain the lab.

Now more than ever, we recognize the need to diversify our funding and rely less on federal sources. The continued support from the Fund will provide some much needed room to breath over the next three years. For example, it ensures we can continue dedicating time to engaging youth despite substantial cuts to environmental education funds in Washington State.

In addition to the uncertainty in our field, we were also uncertain about the role we wanted to play in society. For example, we wondered 'should we pivot and focus more on agriculture or timber issues?'. However, our team refreshed our commitment to urban forests in a year-end retreat after reflecting on our successes this past year, the novelty of the program, and the growing recognition of our team as an urban forest resource, which is evident in the invitations and requests we're receiving for 2026.

One thing we are certain about is our gratitude for the support of the Albert Victor Ravenholt Fund board. Thank you for continuing to support our team, our Lab, and our programming.

Sincerely,


Joey Hulbert

Nelson Pham adding an observation of a redcedar tree to the Western Redcedar Parks Study project at Point Defiance.





Unhealthy maple street trees in Portland, Oregon.

PROGRAM FUNDING

Funding from the Albert Victor Ravenholt Fund has been invaluable for leveraging greater support. Since 2022, we've secured \$3.15M in extramural funding for programming through 2028, including \$2.49M from federal grants, \$543k in state grants, and about \$30k in private grants.

The Albert Victor Ravenholt Fund has committed \$420k to the WSU Urban Forest Health Lab over six years (2022-2028) in total.

FUNDING TIMELINE

Funding	2020	2021	2022	2023	2024	2025	2026	2027	2028	Source
\$29,682							Bonneville EF			NGO Grant
\$150,000							Albert Victor Ravenholt Fund			Gift
\$39,827						WA Nursery				State Grant
\$86,080						APHIS				Federal Grant
\$56,242						APHIS				Federal Grant
\$43,040						APHIS				Federal Grant
\$348,369						WADNR			State Grant	
\$88,221					APHIS					Federal Grant
\$100,000					WADNR					State Grant
\$1,786,431					USDA UCF					Federal Grant
\$145,000					USDA FS					Federal Grant
\$89,403				APHIS						Federal Grant
\$15,000				WA Nursery						State Grant
\$205,071				USDA FS International					Federal Grant	
\$270,000				Albert Victor Ravenholt Fund						Gift
\$77,763			APHIS							Federal Grant
\$40,000			WADNR							State Grant
\$31,570		USDA FS								Federal Grant
\$35,913	USDA FS									Federal Grant
\$48,582	APHIS									Federal Grant
\$164,967		USDA NIFA								Federal Grant
\$8,500	Russel									Gift



TEAM TREES UPDATES

The WSU Urban Forest Health Lab currently provides support for two full-time staff, a PhD student, and five part-time employees.

All salaries, wages, and benefits are entirely covered by extramural grants.



Team Trees heads to Seattle Public Library for a lab retreat via Sounder Train in December.



Taylor McNees
PhD Student

Taylor has completed 3 semesters of her PhD. She has made great progress in her research about sooty bark disease in local forests and greenhouse drought trials.



Andrew Shams
Field Technician (part time)

Andrew joined the team after completing a BS in Environmental Science at UW Tacoma. He spends a lot of time maintaining our plants and greenhouse experiments.



Zarina Gallardo
Scientific Assistant

Zarina completed 3 classes as an undeclared masters student while managing the lab, mentoring students, identifying fungi, and analyzing a lot of data.



Naomi Wurtzel
Field Technician (part time)

Naomi is an Biology student at University of Puget Sound. She dedicated a lot of time this past summer assisting Taylor in the Greenhouse.



Isiah Montejano
Outreach Coordinator

Zay led many activities that engaged youth and developed relationships with Tacoma communities. Zay also joined the board of the Tacoma Tree Foundation.



Spencer Sanchez
Laboratory Technician (part time)

Spencer completed a 2024 internship and continued to work with us while completing his Biology associates at Tacoma CC. He plans to attend UW after getting residency.



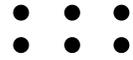
Alexia Green
Laboratory Technician (part time)

Alexia is a student at Highline College with goals to study urban studies at UW Tacoma. She completed an summer internship with Team Trees in 2025 and continued to work with us.



Nelson Pham
Research Technologist (part time)

Nelson works remotely part-time as a full-time student at UW Seattle. He completed a 2024 internship with us, while at Tacoma CC, and has helped with a lot of GIS related tasks since.



2025 HIGHLIGHTS

1,100

'Redcedar Band'

More than 1,100 trees were measured and shared by community scientists in the Western Redcedar Parks Study at Point Defiance Park in Tacoma, Washington.

2

Advancing Participatory Science

Our team, along with Ray Lepore from the 'Redcedar Band', presented two talks at the Conference for Advancing Participatory Sciences (CAPS) in Portland, Oregon.

3

Conference Participation

Our team leveraged grant funding to participate in CAPS, the Annual Training Conference of the Pacific Northwest Chapter of the International Society of Arboriculture, and Partners in Community Forestry.

1

WA Urban Forest Summit

Our team was invited to share a presentation at the UW Urban Forest Summit titled 'redcedar dieback increases with urban heat'.

2025 NUMBERS



57

Education Events

17 presentations, 9 guest lectures, 11 tabling events, 16 campus and lab tours, 1 online workshop, 3 webinars.

24

Engagement Activities

6 community engagement events, 13 youth engagement events, 5 meetings with interns and new project partners.

6

Research Deliverables

1 published co-authored manuscript, 1 submitted co-authored manuscript, 2 submitted fact sheets, 3 presentations at scientific meetings.

Community scientists, Ray and Carl, collecting data on western redcedar trees at Point Defiance Park, Tacoma, Washington.



A Year in Review



Bigleaf maple tree branch with internal stain from sooty bark disease fungus at Wildwood Park in Puyallup, Washington.

Our Mission

The Mission of the WSU Urban Forest Health Lab is to keep trees and communities healthy through novel education, engagement, and discovery.

Our Vision

Our vision is to extend WSU's land grant mission of service into urban communities by providing applied learning opportunities for urban stakeholders, engaging urban communities in scientific methods, and conducting research to promote healthy urban forests and communities.

2025

The following pages highlight the activities and deliverables accomplished during 2025 in regard to our mission and vision.

EDUCATION



Providing education and applied learning opportunities is a major pillar of our program and we delivered more than 50 educational activities in 2025.

- 2025 included many new classroom partnerships and a third year of engagement with the Science and Math Institute at Tacoma Public Schools.
- The team also delivered 17 presentations to audiences ranging from neighborhood councils and Master Gardeners to professional symposia and workforce development programs.
- 9 guest lectures were delivered to students at 8 colleges and universities.
- Outreach was expanded through 11 tabling events, reaching community members at fairs, expos, and environmental celebrations.
- The WSU Urban Forest Health Lab led 16 tours with stakeholders and students during 2025.
 - 25 students completed post-tour surveys.
 - About 80% indicated the tour increased their interest in pursuing a career in science.
 - Approximately 70% of participants agreed the tour made pursuing an MS or PhD feel more attainable.
 - Around half of participants described a change in perspective or life direction, particularly in how they notice tree health and environmental research in their daily lives.



ENGAGEMENT

In 2025, the lab coordinated 24 engagement activities that combined community science, youth programming, and partnership development.

- Community engagement included six public trainings tied to iNaturalist, Western redcedar (WRC) measurements, and the Grit City Tree Count, resulting in the logging of over 1,100 trees through parks-based projects.
- Youth engagement included 13 events with SAMI, Northwest Youth Corps, Washington Conservation Corps, Muckleshoot Youth Crews, and Palmer Scholars, where participants conducted soil sampling, tree measurements, fungi bioblitzes, and sentinel garden stewardship.
- Internship and partnership activities strengthened regional collaboration through technical trainings for interns and coordination meetings with municipal partners and university faculty, helping align research, monitoring, and education goals across cities and institutions.

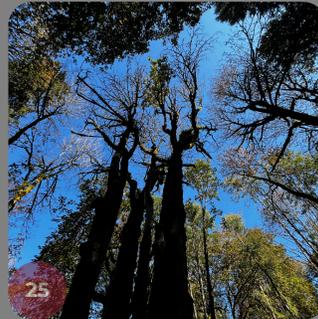


DISCOVERY

Research activities advanced understanding of multiple forest health challenges while integrating community science and education. Collectively, these activities strengthened the lab's impact and recognition as a resource to urban forest stakeholders.

- Major highlights included progress on western redcedar dieback monitoring, with over 400 participants engaged through iNaturalist and 4,163 trees documented, driven in part by the growing 'Redcedar Band' community scientist group.
- Work on sooty bark disease expanded knowledge of host range in the Pacific Northwest and was presented nationally. A second greenhouse trial was initiated to examine temperature effects on pathogen growth in maple hosts.
- At the Port of Tacoma sentinel tree site, youth crews supported monitoring, stewardship, and insect collecting.
- Research into sword fern dieback identified many potential causal oomycetes (10 *Phytophthora* and 8 *Pythium* species), with greenhouse pathogenicity trials underway.
- A third year of measurements were completed in the lab's western redcedar climate adaptation study, which doubles as a demonstration site for learning too.

Additional research outcomes included the submission of two manuscripts and two fact sheets, and sample prep to complete multigene phylogeny of a novel subclade of *Globosporangium intermedium*, a plant pathogen commonly found in Northwest forests.



WSU Urban Forest Health Lab



THANK YOU

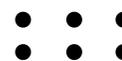


The staff and students in the WSU Urban Forest Health Lab are extremely grateful for the previous and continued support of the Albert Victor Ravenholt Fund. \$420,000 is a lot of money, but it established a novel program at WSU and provided a strong foundation to develop capacity and leverage it into the future. It also directly changed the lives of Team Trees and the continued support will ensure the team can serve hundreds of more youth through environmental educational opportunities through 2028.

The lab is one of a kind and it is a young program eager to build a lasting legacy. It would not exist without the seed funding provided by the Albert Victor Ravenholt Fund. Thanks to the Fund, the lab will continue to leverage the support to leave a legacy for our team and the communities we engage.



Zarina, Taylor and Spencer examining the diversity of fungi isolated from unhealthy maples from Spencer's internship project.



Annual Report Photo Captions

1. Taylor sharing about her bigleaf maple trial during a tour with Parks Tacoma staff and community scientists.
2. Joey and a cell biology class from Pierce College at Wildwood Park in Puyallup.
3. Zarina working with a student at the Science and Math Institute (SAMI) in Tacoma Public Schools.
4. Tour of legacy elm resistance trial at WSU Puyallup REC with Washington forestry stakeholders and agency staff.
5. Faith sharing with Parks Tacoma staff and community scientists during a tour.
6. Joey sharing about tree health with Palmer Scholars at Clover Park Technical College in Tacoma.
7. Taylor sharing about her research with students from Tacoma Community College during a lab tour.
8. Joey presenting at Tree School at Clackamas Community College in Oregon City.
9. Joey sharing a poster about redcedar and urban heat research with community scientists during a tour.
10. Team Trees preparing for tabling at the 2025 Spring Fair in Puyallup.
11. Isiah and Faith presenting during a Grit City Tree Count Training at the East Side Community Center in Tacoma.
12. Youth from the Northwest Youth Corps helping steward the sentinel tree planting at the Port of Tacoma.
13. Student from Pierce College helping assemble 'bait buckets' for a pilot research project to explore if *Phytophthora* species are present in tree canopies at Wildwood Park in Puyallup.
14. Carl, community scientist, capturing an observation of a redcedar tree for the Western Redcedar Parks Study at Point Defiance Park, Tacoma.
15. Community scientists measuring a redcedar tree for the Western Redcedar Parks Study at Point Defiance Park, Tacoma.
16. Youth from the Northwest Youth Corps moving mulch to help steward the sentinel tree planting at the Port of Tacoma.
17. Youth in the Northwest Youth Corps measuring a street tree as part of the Grit City Tree Count in South Tacoma.
18. Student collecting soil sample from the Science and Math Institute in Tacoma Public Schools.
19. Youth from the Northwest Youth Corps helping steward the sentinel tree planting at the Port of Tacoma.
20. Youth from the Northwest Youth Corps helping transplant sword ferns for greenhouse trials.
21. Youth from Washington Conservation Corps helping transplant western redcedar trees.
22. Community scientists helping transplant large western redcedar trees in the WSU Puyallup REC 'pot in pot' nursery.
23. Sooty bark disease sample with spores collected at Penrose State Park on Key Peninsula.
24. Taylor collecting a sooty bark disease sample at Point Defiance Park, Tacoma.
25. Dead and dying maple trees at Wildwood Park in Puyallup.
26. Isiah measuring conductance in fronds of infected western sword ferns in greenhouse trials.
27. Zarina and community scientist collecting samples of sword fern rhizosphere.
28. Joey peeling the bark of a dead western redcedar to isolate a sample of *Coniophora puteana*.
29. Healthy and dead sword ferns in the greenhouse sword fern trial.
30. Isiah washing and sampling roots from sword ferns collected in the field.

