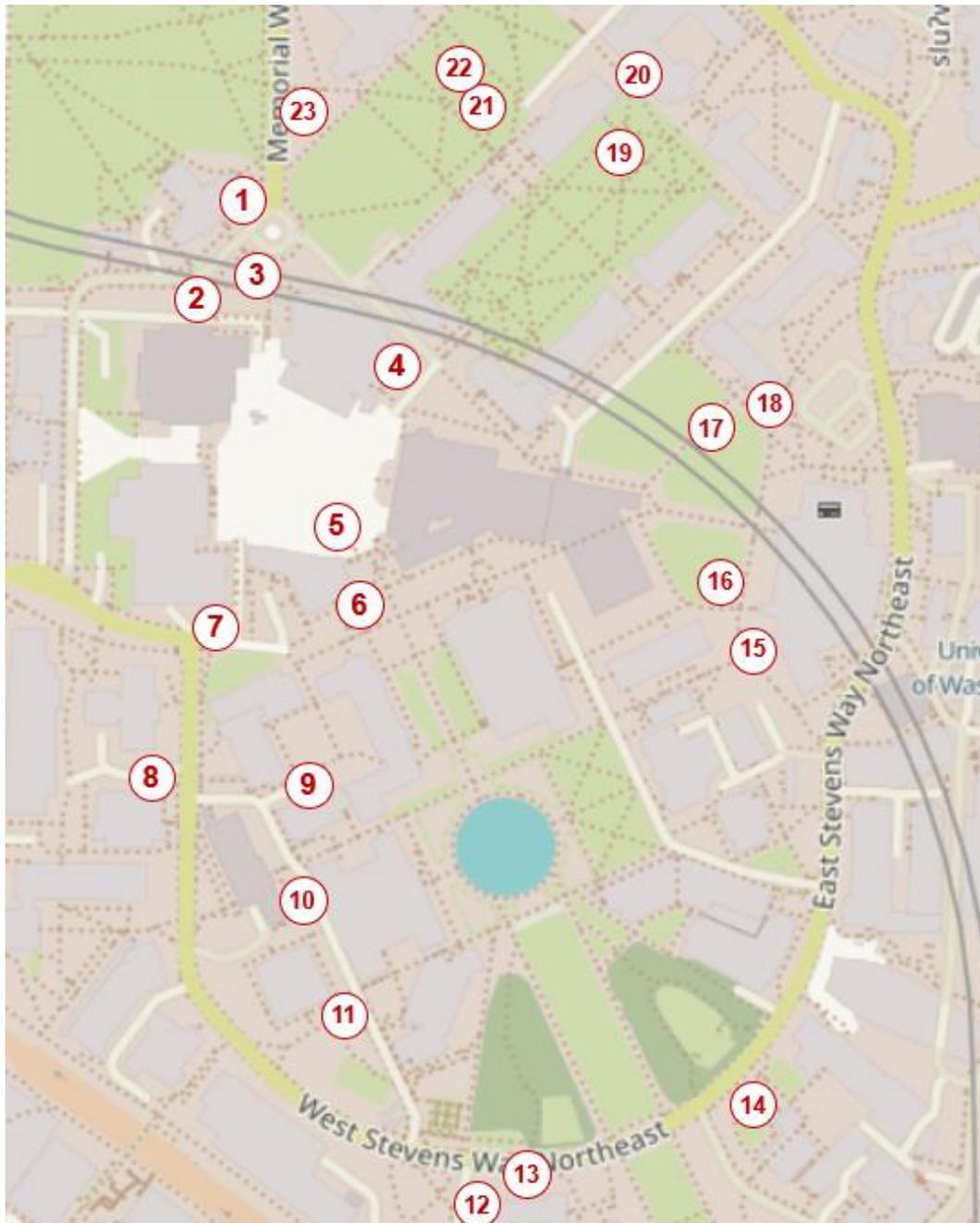


University of Washington School of Environmental and Forest Sciences Brockman Memorial Tree Tour



About Trees For Seattle:

Trees for Seattle, a program of the City of Seattle, is dedicated to growing and maintaining healthy, awe-inspiring trees in Seattle. Trees build strong communities by:

- Making our streets friendlier places to walk and bike
- Soaking up rainwater to keep our streams, lakes, and Puget Sound clean
- Calming traffic, helping to avoid accidents
- Cleaning our air, making it easier to breathe
- And much more!

Seattle's urban forest depends on you! 2/3 of Seattle's trees are planted around homes and maintained by residents. Without those trees, Seattle would be a sad place. Working together, we can have an urban forest that is healthy and growing.

You can get involved in many ways:

- **Attend a Tree Walk:** We host free monthly tours of the unique and beautiful trees in neighborhoods across Seattle. Self-guided versions are also available on our website.
- **Volunteer:** Our volunteers lead Tree Walks with friends and neighbors and participate in fun events like Tree Stewardship work parties to help keep trees healthy and thriving. You can commit for an hour or a lifetime. Everyone is welcome.
- **Plant a Tree:** Our Trees for Neighborhoods project supports Seattle residents in planting trees around their homes by providing support, free trees, and workshops.

For more information on our work and how you can get involved: Visit: www.Seattle.gov/trees Call: 206-615-1668 Email: treembassador@seattle.gov Follow Trees for Seattle on Facebook

About the Brockman Memorial Tree Tour:

This Seattle Tree Walk is based on the University of Washington Campus Tree Tour, originally compiled by Professor C. Frank Brockman in the 1980s. About 480 different kinds of trees beautify the University of Washington grounds. Since there are only 28 tree species native to the Washington State, the vast majority of these trees are exotic in nature. Since before the turn of the century, forestry professors, botanists, gardeners, and landscape architects have planted this wide array of trees in order to facilitate both decoration and education. This means that the U.W. provides a fantastic opportunity to observe and appreciate a wide variety of trees in a relatively small area. The campus community views trees as valuable resources, studies their ecological roles, and admires their fascinating variations and seasonal transformations.

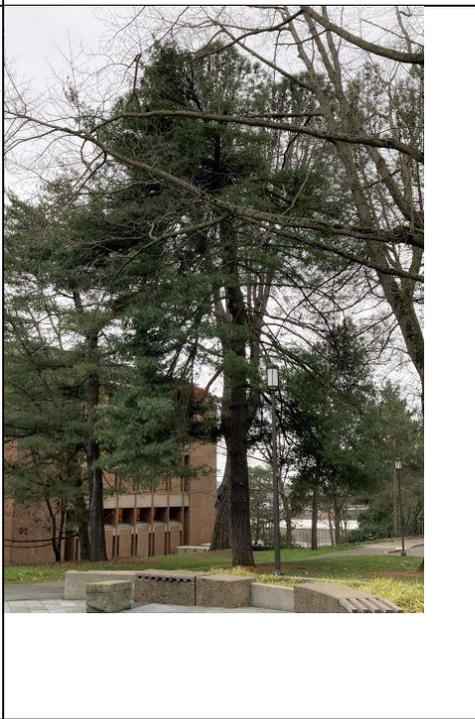
Originally the Brockman Tree Tour was in the form of a printed booklet available for the public in Anderson Hall and the center for Urban Horticulture on the UW Campus. In 2010, a website was created by Carly Thornburg and David Campbell. This Seattle Tree Walk is an adaptation of the most recent renovation of the Campus Tree Tour, an updated website by College of the Environment students Thuy Luu and Theodore Hoss. The tour is maintained by the School of Environmental and Forest Sciences. The new website contains a variety of tree related education resources, including an introduction to botanical tree identification vocabulary, interactive maps, a native tree tour, a biography of Professor C. Frank Brockman, and the historic "Tree of the Day". Additionally, photos for all trees on this tour may be found on their respective pages on the website, which may be found at <https://sites.google.com/uw.edu/schoolofenvironmentalandforest/home?authuser=0> or via the QR code below. This adaptation contains 30 of the 81 species found on the full tour, and we encourage the viewer to take time to visit the whole tour! We hope that you enjoy this tree walk, may you find insight and inspiration amongst these beautiful green spaces!

Brockman
Campus Tree Walk:

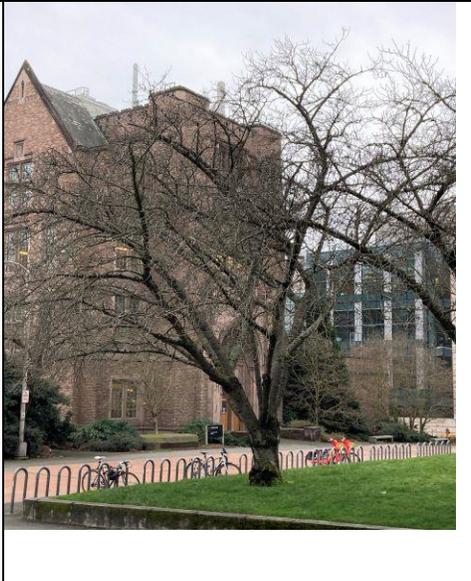
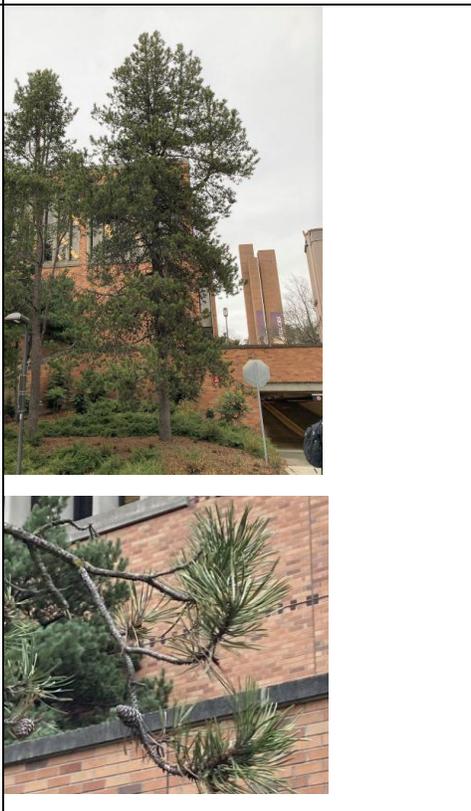


Memorial/UW

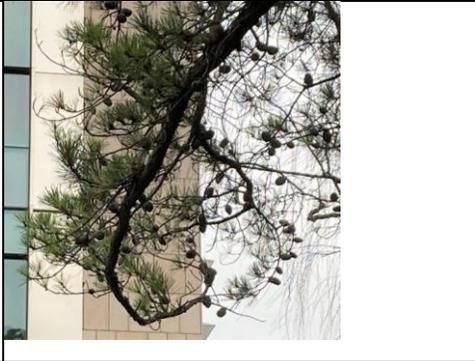
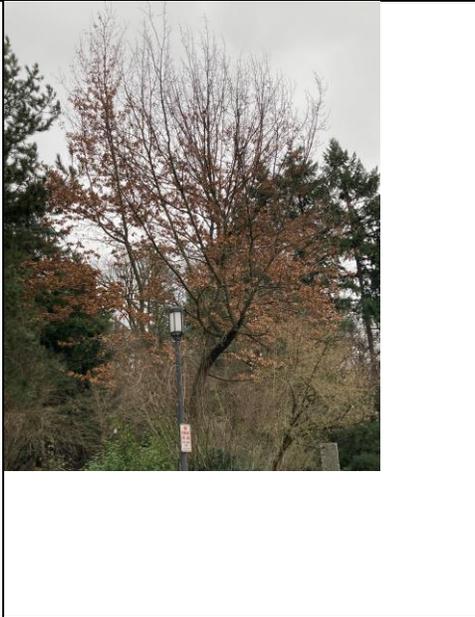
Tree Number & Common name <i>Botanical name</i>	Tree Descriptions	Photos
<p>1. Sweet Gum <i>Liquidambar styraciflua</i></p>	<p>On the traffic circle in front of Parrington Hall stands a group of Sweetgum trees of the beautifully named Liquidambar genus, a species from the southeastern United States. Just like the Sycamore, they have very distinctive features from those other families we have seen so far. The shiny green palmate leaves have 5-7 extremely characteristic triangular toothed lobes and growing alternately (unlike the somewhat similar looking leaves of maples, which grow opposite). They are smooth and relatively small, fragrant, and quite dense, covering a handsome crown so as to make yet another wonderful shade tree. Like the sycamore, it may be seen all over Seattle, but unlike that last tree, the leaves in autumn call the attention like almost no other. They are spectacular, ranging from bright yellow to darkest red even on the same tree. The seed pods are also distinctive, tough and round, with small holes on a long stem and with small spines which can be extremely uncomfortable on bare feet. Resin of this tree can be used as a stabilizer in baking and chewed to sweeten breath. It has also had a variety of uses in medicine, incense, soap, and as an adhesive.</p>	 
<p>2. California Gray Pine <i>Pinus sabiniana</i></p>	<p>A California Gray Pine stands north of Odegaard and west of the flagpole at the western side of the grass. Anyone who has stood in a grove of these trees will know that the sound of the wind in her long needles is as powerful a music as any ever created. They are held on graceful limbs, those on the bottom drooping, those above ascending, with the grayish needles clustered in groups of three. The shaggy gray bark is thick and heavily ridged, and the cones of this</p>	

	<p>species are astoundingly large, up to 10 inches long and egg-shaped with stout curved barbs. It has a broader crown than many pines, often with multiple trunks. It inhabits the drier foothill regions below the elevation of the Ponderosa Pine, the next on the elevational ladder in that state. Within its large cones are pine nuts of great size. The seeds of this species were of great importance to the wildlife and indigenous peoples of its home range. The Gray Pine is very drought and fire resistant but cannot grow well in shade. In addition to being a food source, its resin is useful as an adhesive and its roots as a basket weaving material.</p>	
<p>3. Eastern White Pine <i>Pinus strobus</i></p>	<p>Just west of the flagpole stands an eastern white pine, the first of this tour's white pines. Members of this group are distinguished by needles in groups of 5 and long cylindrical cones (without sharp spines), much more graceful than those of the 3 needled yellow pines which are quite stout. A native of the central and eastern United States and southern Canada, it has been one of the most important forestry trees of the east. The state tree of both Maine and Michigan, the tall straight trunks could once be found reaching 150 feet in height in groves covering vast swaths of the old northwest (now the Midwest), but heavy logging in the past few centuries has severely depleted the number of old growth specimens remaining. A cylindrical tree with a rounded top, its needles are smooth and dark green, stiffer than those of the Western White Pine and lighter on the interior than the edges. The light gray bark is fissured, and the cones are long and cylindrical, with more papery scales than those of the pines seen previously on the tour and reddish-brown color.</p>	

<p>4. Norway Maple <i>Acer platanoides</i></p>	<p>Along the east edge of Kane Hall are several Norway Maples, a species introduced from Europe as an ornamental in the mid 1700's due to its strength, size, and ease of propagation. Like the Japanese Maple, this species has many cultivars of varying phenotypes, but can generally be distinguishable by its dual winged seeds flattened to about 180 degrees. The leaves of the Norway maple are palm shaped and lobed but with more irregular and pointed teeth at the end of each major vein. The leafstalks are also quite long, and when broken they release a milky sap. Additionally, unlike other maples, the bark does not become shaggy with old age. The gray-brown bark is tightly furrowed, becoming more so with age. In autumn the dull green leaves turn a beautiful yellow, falling along with their helicopter seeds. Few species are more widely planted as urban street-trees, but because they release a chemical into the soil to prevent competition, they have been known in some cases to become invasive.</p>	
<p>5. Shumard Red Oak <i>Quercus shumardii</i></p>	<p>Another variety of oak stands sentinel over the University's Red Square, covering the north side of Gerberding Hall with their impressive crowns. These are the Shumard Red Oaks of the southern coastal plains, with wide crowns of ascending branches and foliage known for its energetic growth and late retention of its leaves in fall before they turn a reddish-purple color. The leaves are deeply lobed with bristly toothlike tips, multiple points per lobe on the leathery leaves. These leaves and the acorns of this tree are smaller than the eastern species called the Red Oak, and its leaves have tufts of hair on the underside. Additionally, the bark is more rugged. As many oaks are, this species is a great source of food for wildlife and also serves as a buffer along streams and swamps across a range of soil pH. Its roots lack tolerance to disturbance so one must take into account that once a spot is picked for planting, there it shall remain.</p>	

<p>6. Hisakura Cherry <i>Prunus serrulata</i> 'Choshu-hisakura'</p>	<p>Along the path to Rainier Vista on the east side of Gerberding Hall are several Hisakura Cherries. There are numerous cultivars of Japanese Flowering Cherry, one of which we have already seen on this tour, the famous Yoshino Cherries of the University's Quad, but this variety is rarer than most. Its leaves and bark exhibit typical Cherry features, the leaves are oval shaped, rounded on the base and tapering to a long point at the tip, with pinnate venation and serrated margins. The bark is relatively smooth and light gray when young, with numerous lateral lines, furrowing and darkening with age. It differs from the common Kwanzan cherry by blooming earlier, growing broader, and staying denser. Additionally, it lacks the hanging pom-pom flowers and its leaves are narrower and less fringed (wavy on the edges). These are the only campus specimens of this rare variety, which is not available in nurseries.</p>	
<p>7. Shore Pine <i>Pinus contorta</i></p>	<p>Another of the four members of the Pine family native to Washington state is found near the base of the southwest steps from Red Square besides Meany Hall. These are Shore Pines, a variety of Lodgepole Pines which are adapted to live in the wetter climate of Western Washington. The lodgepole grows up and down the west coast and far into the Rocky Mountains (where it has been called the Tamarack, although true Tamaracks are actually Larches). In our climate, it grows shorter and more gnarled than in most of its range, and it is the only native 2-needled pine in this state. Its cones are small, and egg shaped, woody and spined, rather unpleasant to step upon, and very prolific. The interior of the tree has evolved to burn incredibly well, an odd survival tactic it would seem, but the effect is to burn away all competition for when its offspring germinate after being scarified by the fire. A versatile species, the resin was used to coat canoes and to attach arrowheads, and the pitch and bark could be made into a paste for cuts or tea for tuberculosis.</p>	

<p>8. Quaking Aspen <i>Populus tremuloides</i></p>	<p>South of the Architecture Hall are several young trees known as the Quaking Aspen. While picking tree favorites is difficult, this species holds beauty and wonder beyond that of almost any other one might see. There are the leaves, bright green in summer, almost round with an abrupt point, and set on a long flat stem. The effect of this flat petiole is that the slightest breeze sets the whole tree rustling, performing the most beautiful wind dance that can be imagined. Since the tree reproduces mainly from the roots, it often forms dense groves such that the whole forest seems to quake as the wind whispers through. The autumn colors are equally spectacular, gold to orange, brilliant and bright. There is also the bark, smooth and white with small lateral marks, graying and fissuring with age but providing an amazing contrast to the leaves and any dark background they might front. The species is also immensely successful, the most widely distributed species in North America, and fifth most in the world. Because they reproduce via clones stemming from roots, the true organisms are immense. Whole groves all connected beneath soil and all a single being though there may be many trunks. Because of this, there is speculation that these trees may be some of the oldest in the world; even though one trunk may perish, the grove lives on.</p>	 
<p>9. Pitch Pine <i>Pinus nigra</i></p> <p>47.65401, -122.31018</p>	<p>North of the Chemistry Library is another species of pine (we do love our pines here at the University of Washington)! This is a Pitch Pine, an eastern species whose native range stretches from Maine to Georgia. A relatively short species compared to our western giants, it grows to about 65 feet in height with a cylindrical shape and very open irregular crown. Like the Ponderosa, its needles are in fascicles of 3, but they are often twisted and growing at a right angle to the shoot. A very distinct feature of this species is its shoots stemming from dormant buds in the trunk shooting out like sucker growth from the bark. This is unusual for a pine and may be observed on these specimens. The brown cones are small and ovoid, a reddish brown and spined. Various indigenous peoples of the east coast found uses for this tree. The pitch can be used to cure burns, boils, cuts, and rheumatism, and the Tsalagi people utilized the wood for canoe making.</p>	

		
<p>10. Common Fig <i>Ficus carica</i></p>	<p>Squat and spreading, across the street near the entrance to the Chemistry Library stands a tree with a household name, the common Fig. While it may lack a conventionally attractive name, this little tree has behind it an incredible history of over 4000 years of human cultivation. Not all species of fig produce edible fruit, but this variety native to southern Europe and western Asia does, especially in warmer climates (it struggles and even perishes in temperatures less than 20 degrees Fahrenheit. The leaves of this species are generally quite large and lobed, although sometimes they lack the lobes and are heart shaped. The fruit is pear-shaped and stiff when unripe, growing directly off the stem itself. It ripens to a purplish color and becomes squishy. Inside are dozens of seed enclosed in a tasty flesh and circled around the center of the fruit. Pollination of fig species is undertaken by wasps which form a mutually symbiotic relationship with the trees. The loss of any particular wasp species would result in the loss of the fig species to which it was tied and vice versa.</p>	
<p>11. Oregon White Oak <i>Quercus garryana</i></p>	<p>At last, after many oaks from other parts of the country and world, we arrive at the south edge of Benson Hall where below its patio stands a tall, impressive Garry Oak specimen. It is the only oak species native to Washington State or British Columbia. Another white oak species, its deeply lobed leaves lack the toothed points of the red oaks and instead have rounded tips. The tops of these deciduous trees are shiny green, the bottoms more yellowed and slightly hairy. It can grow large and cone shaped or broad and spreading depending on conditions, with heavy branches and fissured gray bark. They are known to live up to 500 years and produce barrel-shaped acorns about an inch in length capped by a shallow cup. The Salish people used the acorns as a food source, and the Saanich found that the bark could be used to heal tuberculosis. The wood has little commercial value. The tree prefers more range-like environments over</p>	

	<p>forests of taller conifers, exactly the kind of land which has been coveted for agricultural usage. As a result of this and fire suppression by colonizers, the range of the tree has been severely impacted.</p>	
<p>12. Yellowwood <i>Cladrastis kentukea</i></p>	<p>Just west of Anderson Hall stands a large Yellowwood, spreading its broad canopy of light green foliage over a small grassy patch between the building and walkway. A member of the pea family, this specimen exhibits some of those traits of that group, including some we will see mirrored in its relatives the Honey Locust and Mimosa Tree later on the tour. The leaves are compound, exhibiting alternate oval shaped leaflets and bright green in color. The flowers are as reminiscent of other pea plants as the leaves, hanging down in clusters, bright white and 8-14" long, leading to a very showy display. These give rise to the long drooping pods of seeds which are also a hallmark of this family of plants. While populations of this tree in its native eastern United States habitat are stable, its range has been fragmented, and mature individuals are thought to be on the decline. This is a shame which any who sit under its wide shady crown or enjoy the fragrance of its floral extravagance may attest to. Fortunately, the tree is found as an ornamental in a variety of settings and will likely maintain a substantial presence as a landscape tree.</p>	
<p>13. Japanese Snowbell <i>Styrax japonicus</i></p>	<p>Standing upon the Northwest lawn of Anderson Hall is a small shapely tree which is a stunning example of nature's capacity for showy displays. The Japanese Snowbell gains its name from the tiny bell-shaped flowers which cloak the tree in a mantle of white early each summer. Not limited to a single season of beauty, she continues summer under an open crown of thick glossy green foliage, then manifests a lovely bright yellow when cooler temperatures begin to prevail. A great benefactor of pollinators the flowers are known to attract many bees. Additionally, the wood is quite strong and has been used as a traditional source for the handle of umbrellas, toys, walking sticks, and prayer beads in its native range of east Asia. Its tough wood also exhibits properties which make it extremely resistant to insect pests and rot diseases. A species of low apical control (one lacking the straight and sky bound posture of the great conifers of this tour which instead spreads out its branches to form a</p>	

	<p>rounded crown), this species only achieves a height of about 30'. It is nevertheless exceedingly lovely in any season and a valuable part of this tour.</p>	
<p>14. English Elm <i>Ulmus procera</i></p>	<p>Unfortunately, this tree is no longer here, likely due to Dutch Elm Disease.</p> <p>These tall sturdy trees are fair examples of the English Elm, a species once well-known and recognized naturally across the landscape of the British Isles. However, the species along with many others native to Europe and the Americas have in the past centuries been scourged by Dutch Elm disease, a fungal infection native to Asia for which other elm species have no immunity. Mature specimens such as the ones found on this tour are rare in many areas. A feature distinguishing these trees from the American White Elm on this tour is the height of the central trunk, which grows impressively straight and tall up to the high rounded crown. The leaves of these trees are dark green on top and quite rough; the bottom is lighter and slightly hairy. Many examples of "sucker growth" may be seen emerging from the trunk, which is the trees main reproductive strategy as many of the small two-winged seeds it produces are not viable.</p>	
<p>15. Silk Tree <i>Albizia julibrissin</i></p>	<p>Just north of the patio outside the southern HUB entrance, stands a tree known for its plentiful and fragrant summertime blooms. This is the Silk Tree, also called the Mimosa or Powderpuff tree, and it is called such because of the shape of these very pretty flowers, which are composed of silklike thread and resemble a bright pink cotton ball. These flowers, which come in bunches, provide a show which lasts the entirety of summer, and it is no surprise this tree was brought to the America's as early as 1749 for use as an ornamental. The leaves are also exquisite, appearing late, often months after most everything else has leafed out. They are bipinnately compound, each leaf having leaflets which in turn have their own leaflets. They are dark green above and light green beneath and quite large. The flowers give way to seed pods which rarely achieve growth in Seattle's climate. One most beautiful time to visit this tree is during a nighttime rainstorm, when the leaves droop and fold as if the tree is sleeping, thus giving rise to its native Japanese name Nemunki, meaning sleeping tree.</p>	 

<p>16. Norway Spruce <i>Picea abies</i></p>	<p>The tree growing closest to the brick path in front of the main entrance to the HUB is a relative to a pair of our native species, the Sitka and Engelmann Spruce. This Norway spruce, a cousin from the European Alps, shares several common features. It has sharp tipped needles (spikey spruce as the adage goes) and a pyramidal shape, as well as scaly bark like the world's biggest cornflakes and papery-scaled cones. An additional identification feature is the four-sided leaves; try twisting them in your fingers. A dark and ragged tree, this species has been historically valued for its usefulness as a lumber and vast range of growth. Be sure to watch for the long light brown cones hanging from the branches and speckling the ground around their base.</p>	 
<p>17. Copper Beech <i>Fagus sylvatica purpurea</i></p>	<p>Next to the little red swing on the upper HUB lawn is an exciting large deciduous tree native to Europe. Its glinting metallic foliage tells us that it is a Copper Beech, a relative of the oaks which peculiarly has evolved to show a bit more color than just that found on the green spectrum. While the standard European Beech dresses its oval leaves in shiny green on top and dull green below, this variety ranges from purple to a coppery gold color, making some specimens appear as if they are giving an Autumn display all summer long. It is a grand spreading tree with a large, rounded crown and distinct smooth gray bark. In late summer, small hairy pods open to release beechnuts, which are edible in moderation and litter the ground in great numbers (usually slightly chewed by local wildlife). An oil extract of the seed is said to be comparable to olive oil. Taking time to view this tree in a slightly breeze is a worthwhile experience, especially in fall when the leaves become even more deeply colored before falling to the ground.</p>	

<p>18. Paper Birch <i>Betula papyrifera</i></p>	<p>At the southwestern corner of Thomson Hall stands a very prominent specimen of another of our Pacific Northwest natives, the Paper Birch (and no, the Birch is not right after the Beech to be intentionally confusing, it just grows there). An easy identifier of this species growing wild here is its distinctive papery bark, white and smooth with lateral black lines marking it at regular intervals, peeling back in some places, there are very few look-alikes to confuse it in. In the city however, the situation can be more difficult. European birches are more popular as an ornamental as they are more easily cultivated and look quite similar. The Paper Birch generally has significantly larger leaves, oval to round and tapering abruptly to a long-pointed tip, the bottoms paler and slightly hairy. They are serrated on the edges. Male and female reproductive bodies appear on separate catkins, long hanging bodies which are either slightly fluffy texture or waxy and grainy. Here in Washington, this species prefers to grow on recently disturbed land. However, it is quickly outcompeted by larger and more shade tolerant species. The outer bark was used extensively by the native people for a variety of applications.</p>	
<p>19. Yoshino Cherry <i>Prunus x yedoensis</i></p>	<p>Lining either side of the Quad are perhaps the most famous trees in Seattle, the renowned University of Washington Yoshino Cherries. A natural hybrid from Tokyo Japan, these trees were planted here in 1936. They are very fine examples of mature specimens, growing to 50' from gnarled dark base to the top of their rounded dark green crowns. They are open, with heavy branches, smooth when young but considerably rough at this age. The leaves are toothed and oval, tapering to a sudden point and attached via a slender hairy shoot. While beautiful enough in summer and fall (when the leaves turn a bright orange), the true show is in spring. Each year in late March to early April and before the leaves appear, these trees blossom in one of the showiest floral displays which can be seen in the state of Washington. For a few weeks it appears as if every tree has experienced a very localized and severe blizzards, cloaking themselves in white and pink before raining the small petals down around them, much to the joy of the thousands who flock to see them each spring (if you are a student avoid taking a quad route to class during this time, you will be late). These flowers give rise to no fruit, and as the trees are growing quite old the UW is working on cultivating clones to replace them when it becomes necessary.</p>	

<p>20. Cedar of Lebanon <i>Cedrus libani</i></p>	<p>This tree stands tall and imposing against the art building on the northwest corner of the quad. A Cedar of Lebanon, this species is sufficiently mature to be slowly losing the pyramidal shape of youth and broadening into a rounded massive, crowned tree on a tall thick trunk. It exhibits those standard features of a cedar, upright barrel shaped cones, tight whorls of needles (a darker green like that of the Deodar Cedar seen earlier), and a thick trunk of fissured dark bark, darker than the other two seen today. Its needle cluster are generally smaller than that of the other two, with just 10-15 per whorl, and has upwardly ascending branches unlike that of the Deodar which droop. A native of Lebanon to Turkey, the tree is rare, producing few seeds and growing very slowly while simultaneously making good timber, traits which make it difficult to grow prosperously in an age of high wood demand by our species.</p>	
<p>21. Black Walnut <i>Juglans nigra</i></p>	<p>On the Denny Lawn on the north side of King Lane stands an imposing and mature Black Walnut. A source of edible nuts, this species is a particularly flavorful kind, but harder to crack than some other types of walnuts. A large tree, growing to a height of 100', they are native to much of the United States (although not the Pacific Northwest). The leaves of this tree are quite something to behold, long and compound up to 20 inches in length, with 11 to 23 opposite leaflets. They are yellowish green in color and have a very open crown (lots of space between the upper branches). The leaves and husks have insect repelling properties, and when added to a compost pile, black walnut can speed the decomposition process.</p>	
<p>22. Monkey Puzzle Tree / Pewen <i>Araucaria araucana</i></p>	<p>A native of Chile and one of the ancient fossil lineages of this tour is represented in the Pewen, also called the Monkey Puzzle Tree, which grows just up from the Black Walnut on the Denny Lawn. It is easy to see at a glance that this tree is unique and marvelous. Its leaves are scalelike, a thick and heavy triangular shape and a dull green color. They are spiraled around the stalk and heavily overlapped so that each branch appears like the tails of a monkey, bristling and broad. These leaves are built to last, persisting for 10 to 15 years before the whole branch browns and drops off. The cones are large balls of papery scales clustered together with thick fuzz and sharp tips growing upright on the branch. They brown in 2 years and release the seeds from the tree. This tree is sacred to many peoples of South America, but it is also currently threatened by</p>	

	<p>climate change, with declining snowpacks, a major source of water, in its native mountains.</p>	
<p>23. Sycamore <i>Platanoides x hybrida</i></p>	<p>Lining Memorial Way are more than 100 mature Sycamore Trees, the original 57 planted in 1920 as a memorial to students and faculty killed in the first world war. The tree is actually a hybrid, a cross between the eastern Sycamore and its old-world counterpart the Planetree. These London Planetree, as they are called, are distinctly different from any other lineage we have seen so far on this tour. Their leaves are somewhat like those of the maple, palm shaped, with 5-7 shallow lobes, yet they have many teeth, appearing at the tip of each major vein. The fruit is a rounded ball on a long stem and tipped with small brown hairs, and it turns from green to a light brown color over the growing season. A deciduous species, the leaves of this tree do not have a particularly stunning fall color (a light brown), but to make a spectacular thick bright green canopy in the summer, one of the most beautiful shade trees on campus. The bark is perhaps the most distinctive feature, smooth and near white when young but graying and furrowing with age and peeling in puzzle piece-like strips to reveal shades of yellow, white, and green beneath.</p>	