



## STREET TREE SEMINAR, INC.

Your Los Angeles/Orange Regional Urban Forest Council

P.O. Box 6415  
Anaheim, CA 92816-6415



### SAVE THE DATE:

**July 24, 2014**  
**WTMS Summer ~ Dealing w.**  
**Drought**  
**Kellogg West**  
**Pomona, CA**

## 2014 MEETING SCHEDULE

|           |   |                |
|-----------|---|----------------|
| July 24   | WTMS Summer ~ Dealing with Drought        | Pomona, CA     |
| August 28 | Palm Walk & Talk w/ Don Hodel             | Costa Mesa, CA |
| Oct 23    | TBD                                       | TBD            |
| Dec 18    | Annual Scholarship & Officer Installation | Pomona, CA     |

### MISSION STATEMENT

*"To promote the advancement of urban forestry and provide a forum for tree care professionals to share their experiences, knowledge, and expertise for the benefit of the membership and the enhancement of Southern California's community forests."*

### VISION STATEMENT

*"To enhance the health and beauty of Southern California cities by improving the quality of our community forests."*

Remember to email Leon Boroditsky at [leon.boroditsky@lacity.org](mailto:leon.boroditsky@lacity.org) with your reservation



STREET TREE SEMINAR, INC. - Your Los Angeles/Orange Regional Urban Forest Council

# STS Newsletter

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## Soil & Plant Lab with Paul Santos

By Leon Boroditsky

Street Tree Seminar's May 22 meeting was held at the East Anaheim Community Center with Paul Santos as the speaker. Paul Santos is a plant pathologist who received a B.S. in Ornamental Horticulture from Cal Poly Pomona and a Masters in Science in Plant Pathology as UC Davis. Instead of following the usual course of getting a PhD, Paul opened a private lab Soil and Plant Lab, Inc in 1997.

Paul came to talk to Street Tree Seminar about the ABC's of taking field samples for lab testing. After some technical difficulties caused Paul to abandon his PowerPoint presentation, he made some opening remarks about how to take samples. While there are many plant problems that can be diagnosed visually, sometimes more accurate diagnosis is necessary. Quite often a visual diagnosis can be a crap shoot as symptoms can overlap. If you want to know for sure, Paul said you are going to need to send it to a lab. How well you take the samples will determine the accuracy of the results. As well, success is determined by 1) the quality of the samples and 2) the amount of background information that you provide. If the background information is not provided, the results will be incomplete. The issue is rarely ever a single factor: it's usually multiple factors working together.

Paul also talked about the importance of how you package the samples and about when you send the samples in. Samples deteriorate pretty quickly so getting them to lab as soon as possible is imperative. Some diagnoses will still require being "grown out" on a medium like agar. Also, most labs do not work on the weekend, so if you send your samples in at the end of the week, they will be sitting around for a few days which can adversely affect the sample (heat, etc.) He also touched on making sure that the samples are sent in a secure bag as moving samples can spread the pest or disease. This is especially important if you're sending them out of county or state. Paul also mentioned the importance of sampling the correct part of the plant. He also discussed that all samples need to be in separate bags: roots with roots; branches with branches; soil samples separate and all samples need to be properly labeled with as much pertinent info as possible. Keep the samples cool, don't leave them in the sun and if possible in an ice chest. Fred Roth recommended sending in samples on ice.

We then headed out into the field and met under a *Ficus microcarpa 'nitida'* and went over the process of taking samples which begins with assessing visually assessing the symptoms i.e. the physical manifestations of the problem and looking at the interaction between the host and

pest. Paul discussed different types of symptoms: 1) primary symptoms where the pathogen is acting directly on the tissue expressing the symptom and 2) secondary symptoms where the pathogen is not directly acting on the tissue expressing the symptom (e.g. chlorotic leaves.) Phytophthora acts on the roots and the secondary symptoms are seen in the crown. He also reminded the group of the difference between a sign and a symptom; a sign being the physical evidence of the pathogen e.g. powdery mildew.

When assessing the tree to take samples, Paul starts at the top and works his way down. Having the right tools and making sure they are sterilized is extremely important: a pole saw to get samples out of the canopy; an ax and a chisel to dig a little deeper; trenching shovel and soil probe, etc. As you look over the tree, take note of any cankers and if there any check for vascular staining. As well take note of any bleeding. If the canopy is full the bleeding may be nothing. However the bleeding may be beetle related so look for entrance and exit holes. You may need to chisel out the area to take a deeper look. Be sure you that you chisel at least a 1"x1" area and remember to sterilize your tools. As with most samples, we are looking for the interface between healthy and unhealthy area. Paul also suggests that you Sharpie this interface area at the time of taking the sample as the samples can oxidize making the delineation between the affected and unaffected tissue difficult to distinguish.

Next Paul discussed taking root samples and the tools you'll need are a trenching shovel, a bucket and possibly an auger. Take samples from a minimum of two different places and get a good composite of roots: feeder roots, pencil sized roots and thumb sized roots. He also suggests that you sample a minimum volume of roughly a third of a zip lock freezer size storage bag and add a couple cups of field soil to protect the samples. Getting the samples to the lab as soon as possible is extremely important. If you are able to drop them off, that's the best option

and if are going to ship your samples, Paul said to always send them overnight. Diagnosis may take a while. Samples may have to be plated out on different mediums and may have to be "sporulated" to get an accurate diagnosis. There was also a discussion of ELISA (enzyme-linked immunosorbent assay) filed kits versus lab diagnoses. Paul said that ELISA kits are known to give false positives and have an expiration date. Paul's talk was jam packed with practical as well as well technical information and all attendees were thoroughly pleased.



STS Members on a walking tree tour with Paul Santos

\* A big thank you to Alan Hudak for securing the room .

**STS Scholarship Essay- by Kyra Barboza**

Society is in a constant state of change, but as we change it is important that we still incorporate some of our original landscape. One way we are able to do so is through our trees that grow in our neighborhoods. These trees not only provide our communities an aesthetic appeal, but have also been linked to conservation and have been shown to create a better environment for people's health. Without people like those of Street Tree Seminar, Inc. that are dedicated to maintaining and monitoring our urban forests, most of us wouldn't be able to experience the benefits these trees provide.

The presence of trees in urban environments not only looks pretty but also provides homes for birds and other animals that have been slowly pushed out by human development. By providing sites for nesting, the presence of street trees allows native wildlife to continue living in their original habitats, and plays an important role in the preservation of many species. Furthermore, since most of our natural vegetation has been destroyed through the development of a community's infrastructure, we are able to try and protect native trees by planting them in our cities. This is one way of giving back to our environment and doing our part in conservation.

These trees also provide some surprising health benefits. First, the presence of trees in the environment has been shown to reduce stress. Many studies have shown that people who spend time in areas that have lots of foliage tend to be calmer and have improved concentration. Additionally, the presence of trees reduces air pollution, giving us better air to breathe. Cities that contain lots of trees experience better air quality than cities that don't because these trees are able to remove substantial amounts of toxic pollutants directly out of the atmosphere. Surprisingly, street trees also have the ability to reduce the all-over temperature. This is done through preventing the sun's rays from hitting the surface of the ground, therefore reducing the amount of heat absorbed on Earth's surface. A lower temperature leads to improved air quality, lowers energy use and cost, and even reduces the formation of ozone.

Although it would be most beneficial to have flourishing forests, like those in Sequoia or Redwood National Parks, we are lucky enough to still have our urban forest. Even though the trees aren't as abundant as they once were, we can still reap the many benefits from the ones we have planted in our community. Not only do they provide shelter for animals, but they also contribute to important health benefits like reducing stress and better air to breathe. And lastly, as society changes and urban development becomes more prevalent, it is important that we continue to have and maintain the street trees that exist today.

**STS 2014 Golf Tournament**

**STS Golf Tournament:** This year's golf tournament was held at Dad Miller Golf Course in Anaheim. Congratulations to our winners, and thank you to all of our golfers for helping raise money for our scholarship fund.



**1st Place Team:** Tadd Russikoff, Jeff Morrison, Wayne Smith and Jerome Shaluta



**2nd Place Team:** Rob Thompson, Dave Negrete, Phil Elliot and Dave Hayes



**3rd Place Team:** Ignacio Natera, Felix Miramontez, Mike Whaling, Al Epperson

**Closest to the Pin:** Dave Negrete

**Longest Drive:** Jeff Morrison

**Thank you to our raffle prize donors:** STS, Valley Crest, and Frank & Lisa Madero  
**Congratulations to our raffle winners:** Tadd Russikoff, Felix Miramontez, Mike Scorsone, Phil Elliot, and Brandon Smith

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**STS May 2014 General Meeting**

Our May 2014 meeting was held at the East Anaheim Community Center in Anaheim Hills.

**Past Presidents in attendance were:** Alan Hudak, Kevin Holman, Dan Jensen

**Prizes were donated by:** Mauget, Emina Darakjy, Kevin Holman, Wayne Smith, Alan Hudak, Carlberg & Associates

**Raffle Winners:** Dan Jensen, Leon Boroditsky, Ken Pfalzgraf, Antonio Gomez, George Olekszak, and Nate Dodds

**Next Meeting:** Please join us July 24th in Pomona for WTMS Summer Program~ Dealing with Drought: A transitional urban forest. Registration now open on our website!

**We have a new policy going into effect in 2014.** Non-members (and members who forget their name badges) will be charged an additional fee for meetings.

**Special Offer for WTMS Attendees!**



The Wildlife Training Institute is offering a one-time deal for all attendees at the July 24th WTMS Summer Program! All attendees will be eligible to receive the complete training materials, Wildlife Protector Certification and one additional CEU for \$25! That's over 40% off and only available to those who sign up for the WTMS Summer Program! For more information, go to [www.wildlifetraining.org](http://www.wildlifetraining.org)

**STS Well Represented at the CaUFC/ ReLeaf Joint Urban Forestry Conference in San Diego**

Several members of your STS leadership were present for the 2014 CaUFC/ReLeaf Conference in San Diego. There are great new opportunities on the horizon! John Melvin and the Cal Fire crew have been doing great work in securing money for green industry grants— stay tuned for more information!

**More carbohydrates make trees more resistant to drought~**

How well tropical trees weather periods of drought depends on the carbohydrates stored, as revealed by a novel experiment conducted by an international team of researchers headed by ecologists from the University of Zurich in contribution to the University Research Priority Program on "Global Change and Biodiversity." The findings are extremely important for assessing the resistance of tropical forests to climate change and reforestation.

Water is the limiting factor for many plants and trees. Consequently, there are grave concerns that the rainfall patterns altered by climate change could trigger a forest decline on a global scale. According to climate researchers, Switzerland is also affected: The climate models even project hotter and drier summers for this country. An international research team headed by Michael O'Brien, an ecologist at the University of Zurich, is now studying which factors govern the resistance of tropical trees to periods of drought. As the scientists reveal in their study published in Nature Climate Change, stored carbohydrates play a key role in the resilience of the individual plant.

1,400 saplings of ten species monitored

While stored starch and soluble sugar in plant tissues were thought to influence the resistance and resilience of trees positively during periods of drought, this supposition had not been proven. O'Brien and his team planted 1,400 saplings of ten different tropical tree species in Malaysia and devised a novel experiment to manipulate the carbohydrates stored and observe their reaction.

The researchers increased or decreased the concentration of stored carbohydrates and exposed the seedlings to an artificial drought period. It became clear that young trees with more stored carbohydrates were able to maintain the vital water content in the stem for longer than those with fewer stored carbohydrates. "The better drought resistance and thus the greater chance of surviving a period of drought evidently depends on the quantity of carbohydrates stored," concludes O'Brien.

Carbohydrate content different in every tree species

According to the scientists, the ability to store carbohydrates varies both within and between species: "As different trees display a different mortality due to aridity, the impact of a forest decline triggered by climate change is cushioned," O'Brien is convinced. These new insights are also significant for reforestation: The planting of species that store more carbohydrates can be favored to boost the forests' resistance to the drier climates predicted by the climate change models.



Malula Field Station in Malaysia: The experiments are conducted under controlled conditions in the large, black cubes. The installations are large enough to be able to grow the tree saplings unrestrictedly.

\*Article from [www.sciencedaily.com](http://www.sciencedaily.com)  
 Research from University of Zurich