

Newsletter June 01, 2020

PNWTIRC

PACIFIC NORTHWEST

TREE IMPROVEMENT RESEARCH COOPERATIVE



Links

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Personnel

Glenn Howe

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Climate-based seed deployment zones

Meridith McClure, MS student, presented her proposal, "Climate-based Seed Deployment Zones for the Pacific Northwest," to PNWTIRC members at the 2019 annual meeting. Her proposal was well received, so now she's working with PNWTIRC members and others to design a climate-based zone system for the entire Pacific Northwest (PNW).

Her climate-based system will allow users of any of the main zone systems in the PNW to find matching climates throughout the region. This will facilitate wider seed transfers and sharing of materials across the region. The system is designed to be used with either native seed or improved seed from orchards. Meridith aims to create a unified system that is accessible and science-based. Furthermore, she's developing zones using current and future climate models so that seed transfers can account for climate change.

Low-density SNP genotyping in Douglas-fir

We recently began collaborating with the Center for Intensive Planted-forest Silviculture (CIPS) and Rapid Genomics LLC to develop a new lower-cost SNP genotyping platform for Douglas-fir. The main objective is to provide PNWTIRC members with the ability to genotype 2500-5000 SNPs at a reasonable cost. This number of SNPs should be optimal for applications such as genotype ID and analyses of pollen contamination. This work will also be used to develop a SNP genetic map for Douglas-fir and for growth modeling research by CIPS.

Liam Gilson, a masters' student with CIPS, described his thesis research at the 2019 annual meeting in a talk entitled, "Drivers of Productivity Differences between Native and Exotic Range Douglas-fir Plantations in Oregon and New Zealand." In this project, SNP markers will be used to identify related Douglas-fir trees in Oregon in New Zealand to better understand their growth differences in these two contrasting environments.

Meanwhile, the PNWTIRC is using seed provided by Roseburg Forest Products to germinate and isolate megagametophyte tissue for DNA isolation and genotyping by Rapid Genomics. SNP genotyping of megagametophytes will be used to help develop a comprehensive genetic map of the 28K SNPs we developed using the Axiom array. We're excited to present an update on this work at the 2020 annual meeting, scheduled for October 13th.

Other news

The PNWTIRC recently welcomed Zeynep Cicekli to pursue her master's degree under the mentorship of PNWTIRC Director, Glenn Howe. Zeynep, who arrived from Turkey in January, 2020 is now developing ideas for her thesis research, which is being conducted under a scholarship from the Turkish government.

Meridith McClure recently became a Northwest Climate Adaptation Science Center (NW CASC) Fellow by winning a highly competitive award to support her work on developing climate-based seed deployment zones for the Pacific Northwest. Congratulations Meridith!

The next PNWTIRC annual meeting is scheduled for October 13, 2020 -- put that on your calendar!

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