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“Detecting climate adaptation in the giga-genomes of conifers”

Aitken Lab:

Our lab seeks to understand the population genetic structure of temperate and boreal trees, and the evolutionary dynamics that have resulted in that structure. We are particularly interested in the extent of local adaptation to climate in tree populations, the phenotypic traits and genes involved in local adaptation, and the capacity of those populations to adapt to new climates. To investigate this question we are using genomic tools as well as phenotypic data from common gardens and controlled environment experiments. We also infer the phylogeography, demographic history, and levels of gene flow of these populations using a variety of selectively neutral genetic markers. Finally, our work is applied to guide genetic conservation and management strategies for our forests.