Clip #1 Transcript: Background Information

I am Melike Karaca-Bulut and I am a Master's student at [the] Forestry department. I am a scholarship student from Turkey and I also got a position in general Doctorate of Forestry in Turkey with my scholarship, and after my Master's degree I will start to work as a Biologist in Turkey to improve poplar tolerance to drought—that's why I am studying poplar here.

My study is about using **genomic selection** for improving **tree traits** and my objective in my study is to examine the **natural variation** in **wax composition** in related genotypes of poplar trees when grown in a common environment that have drought and non-drought conditions. And to do this objective I have several experiments/several steps; first of them is analyzing the wax chemistry of **clones** and then [second step] identifying the differences among clones and between the **growth stimuli** in drought and non-drought sites and [third step] completing a **Genome-Wide Association Study** on wax traits or phenotypes.

We usually work on poplar species or ***Arabidopsis***—the *Arabidopsis* is the general species in botany or forestry because you know the purpose of the genes in the *Arabidopsis*, so you can compare your species with this plant. But we also study poplar species and in the lab, I am actually doing separate things from my friends [lab mates]—I am doing wax analyzing and I will do the Genome-Wide Association Study at the end of it. But for example, my friends, some of them are testing the salt tolerance to plants or how salt affects the plants, or some of them are studying directly the genes like how they affect plants, so they are doing the transformations between plants to see the genes effects.

Genomics studies are important to make the species more durable/more tolerant to changes. So, like in my study, if we find a gene and we can say that, 'ok this gene is important in the drought, it makes the plant—the poplar—more tolerant to drought', we can use this gene and we can plant these trees on our forests for reforestation so we can have new [more drought tolerant] forests by using this gene.