

ISC student Travel Award Report

Yue Yu, 2024 September 3rd

About me:

I'm currently a Ph.D. candidate in the Botany Department at the University of British Columbia (UBC), Canada. My primary research focuses on sunflower speciation in the face of gene flow, specifically how chromosomal structural variation as a recombination modifier facilitates this process. My work involves both wild and cultivated sunflowers. Recently, I have been collaborating on a project focused on genome-wide association mapping for *Verticillium dahliae* resistance in cultivated sunflowers, a joint effort between our lab and Jun Zhao's lab at Inner Mongolia Agricultural University. We identified 18 lines with full immunity to *V. dahliae* and confirmed the polygenic architecture of *V. dahliae* resistance in cultivated sunflowers. We also identified 148 candidate haploblocks and 23 putative *V. dahliae* resistance genes within these haploblocks, suggesting that membrane vesicle trafficking plays an important role in sunflower resistance, although other mechanisms likely contribute as well. Our results advance our understanding of plant-pathogen interactions between sunflower and *V. dahliae* and provide valuable information for breeding resistant sunflower cultivars.

Expectations:

I was excited to hear that the 21st International Sunflower Conference (ISC) would take place in Wuyuan, Bayannur, Inner Mongolia, China. I knew I would love to attend because I grew up in Inner Mongolia, and these beautiful sunflower fields were always a source of motivation for me to explore sunflower research further. It was surreal to give an oral presentation on my project, and it was truly amazing to see sunflower scientists and sponsors gather from all around the world.

After Conference Feedback:

I had a great time at the conference, meeting amazing scientists, discussing science with peers, seeing sunflowers in the field (they are so beautiful!), and trying out the huge confectionary sunflower seeds! Lastly, I would like to thank various funding sources, including the student travel award provided by the International Sunflower Association (ISA), for making it possible for me to attend this conference.