Hi there, Jagdeep here. Thanks for stopping by! I am a Postdoctoral Scholar at Penn State, University Park, USA. I grew up on a small farm in Punjab, India. Our family farm is where I developed a fascination with the natural world, specifically plants.

I have always wondered about the "hows" and "whys" of the basic functioning of plants. For instance, in 5th grade, I would cut open a wheat stalk to find out what a young wheat spike (about the size of a pencil head) looks like. My Dad - my hero, played a significant role in nourishing my desire to learn. He motivated me on every step and guided me to join the B.Sc. Agriculture at Punjab Agricultural University, Ludhiana, Punjab, India.

Once in the university there was no looking back, thanks to the great group of friends and mentors, I knew I wanted to study plant breeding and evolution. Following that interest, I did my master's from South Dakota State University. I immensely enjoyed working in Dr. Sunish Sehgal's winter breeding program. While studying nitrogen fixation in wheat, I got interested into the world of plant roots. During my PhD at Penn State (with Dr. Jonathan Lynch) I studied the utility of root anatomical and subcellular phenotypes under abiotic stress inlcuding suboptimal water and nutrient availability. Currently I am a Postdoctral Scholar with Dr. Ruairidh Sawers at Penn State. Along with anatomical and subcellular root phenotypes, I now study host genetics in response to Arbuscular Mycorrhiza Fungi (AMF).

Moving forward, I want to work towards developing climate change resilient/abiotic stress resistance crop varieties. Working on climate resilient traits is very personal to me as I have witnessed over the years how terminal drought and heat stress have adversely affected the wheat yields on our family farm and in the overall Punjab region. Using my current knowledge of genetics, plant physiology, and crop modeling; and levering novel computer vision techniques for phenotyping, I want to discover crop traits, genes, and cellular mechanisms that will eventually help us develop climate-resilient crop varieties.

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