Identification of Novel Genes in the PBS3-mediated Pathogen Resistance Pathway in Arabidopsis thaliana Using a Suppressor Screen

PBS3 is an important defense pathway protein in the model plant Arabidopsis thaliana. Plants with mutations in the PBS3 gene are compromised in the accumulation of the key plant defense hormone, salicylic acid (SA), and therefore are more susceptible to many plant pathogens. The mechanism by which PBS3 contributes to SA accumulation is unknown.

In this project, we will use a genetic suppressor screen to identify novel genes in the PBS3-mediated pathogen resistance pathway. The mentee will screen thousands of mutagenized PBS3 plant lines for plants with defense restoration. The mentee will then further characterize these lines, contributing to our knowledge of plant resistance to pathogens.

I have just completed my third year of graduate school in the Department of Plant & Microbial Biology. I began mentoring undergraduates and early-stage graduate students for the first time this academic year. Concurrently, I became a Peer Mentor in my Department’s inaugural year of our Peer Mentoring Program. I enjoyed these experiences and grew from them. However, without any formal training in mentoring in research, I felt that I was not creating the best possible experience for my mentee or for myself. I wanted training and practice in mentoring and as such, was thrilled to be accepted as a SMART mentor.

Through my participation in the SMART program, I have learned and continue to learn a great deal about the roles of a mentor and the different aspects of supporting and advocating for mentees. Empathic by nature and eager to develop positive relationships, I am drawn to opportunities to mentor and will incorporate mentoring into my long-term professional goals and development. In addition to moving exciting research forward, I hope to use this summer of mentoring and the insight I gleaned from the SMART class this spring as a foundation for future successful mentoring relationships.

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