### A. Briefly describe overall research program at your laboratory.

Plants undergo two major developmental transitions after germination, the juvenile to adult vegetative phase transition, and the vegetative to reproductive transition. Correct timing of the developmental transitions is essential for survival and reproductive success of the plant. The miR156-SPL module is involved in both developmental transitions, which are regulated by both endogenous and environmental cues. miR156 targets a sub family of *SQUAMOSA PROMOTER BINDING-LIKE (SPL)* transcription factors, which are conserved in land plants. We are interested to investigate how the miR156-SPL module is regulated and how they interact with other factors to promote developmental transitions.

### B. Briefly describe specific project(s) for your teacher

miR156-targeted SPL transcription factors are essential for plant development and stress responses. Understanding how the miR156-targeted SPLs are regulated is essential for their function. Recently we have found that some flowering time regulators may be involved in regulating SPL activities. The teacher will help with fundamental study to provide detailed mechanisms of how flowering time regulators interact with miR156-targeted SPLs. Work will include isolating high orders of flowering time gene mutants by PCR genotyping and studying the expression of miR156-targeted SPL genes in these mutants by quantitative RT-PCR or analysis of the SPL-reporter activities in the mutants.

**Will any other people (post docs, grad students, undergraduate students, colleagues, etc.) be involved directly with your teacher?**

The teacher will be teamed up with a postdoc in the group.

### C. Will you require any advanced reading/preparation for the teacher?

If yes, please briefly describe.
There will be some selected background reading on the roles of SPL genes and flowering time genes in plant Development. Safety training is also required.