

Biology Seminar

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Intersecting roles for NF-Y transcription factors in plant floral development and stress responses

The Holt lab is interested in describing the functions of NF-Y transcription factors in the plant lineage. In *Arabidopsis*, NF-Y transcription factors function as a complex of three proteins (NF-YA, NF-YB, and NF-YC), each encoded by a small gene family of 10-13 members. Individual *NF-YA* and *NF-YB* have emerged as important regulators of embryogenesis, drought resistance, ABA signaling, meristem maintenance, ER stress, and photoperiod-dependent flowering time. Likely due to overlapping functions, roles for individual *NF-YC* remain largely undefined. We have identified three *NF-YC* (*NF-YC3*, 4, and 9) that are required for the appropriate timing of photoperiod-dependent flowering. Genetic and biochemical data demonstrated that these *NF-YC* are at least partially required for *CONSTANS*-mediated expression of the florigen component *FLOWERING LOCUS T* (*FT*). Microarray analysis both confirmed the importance of these *NF-YC* in *FT* regulation and suggested additional roles in ABA signaling. I will discuss this data and describe our progress towards characterizing the functions of *NF-Y* in photoperiod-dependent flowering and ABA signaling