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**Project:** Chemistry in bloom: elucidating the transition to flowering in plants  
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## Introduction

The transition to flowering is one of the most important developmental switches in a plant's life cycle and has been studied in detail at the physiological, genetic, and molecular levels. The small globular protein FLOWERING LOCUS T (FT) has shown to be the key signalling molecule integrating various environmental and endogenous signals into a flower-inducing signal. A frontier and challenging research topic is to unravel FT's molecular mode of action. Previous work showed that FT moves from the leaves to the shoot apical meristem, where it interacts with the bZIP transcription factor FD, leading to FD activation and the induction of flower formation. Though, how FT modifies FD and which other proteins are involved in FT's functioning is not understood.



## **Goal**

We aim to identify chemical compounds that impinge on FT activity, facilitating the understanding of FT's molecular mode of action and giving the opportunity to identify compounds that can inhibit FT's function in flowering. In parallel, we aim to identify the protein complexes in which the FT protein is active. For this we will use a novel synergistic approach combining proteomics and small molecule chemical tagging technologies. Our last and most challenging goal is to identify a FT mimicking chemical agent, which will facilitate the further elucidation of FT's functioning, and which is also of interest for future applications.