

## **The response of BRUTUS and its mutants under varying iron conditions**

Authors: Dipali Srivastava and Terri Long

Iron is essential for plant growth and development as it plays fundamental roles in many cellular processes. However, iron is also toxic when present in excess because it induces oxidative stress. To maintain iron homeostasis, plants must tightly regulate iron absorption from the soil and its transport in the other part of the plants. BRUTUS (BTS) is an iron-binding ubiquitin ligase in the model plant *Arabidopsis thaliana*, whose absence leads to systemic Fe excess. These proteins sense Fe status via their iron-binding domains and regulate levels of the transporters and enzymes responsible for Fe redox, transport, and storage. The goal of our study is to delineate the molecular and intracellular dynamics of BTS and its targets in the root in response to Fe availability. We will analyze the accumulation and localization of BTS and its mutants (single amino acid substitutions) under -Fe, +Fe, and ++Fe conditions.