“Overcoming bottlenecks in plant gene editing”

Methods for precisely altering DNA sequences in living cells enable detailed functional analysis of genes and genetic pathways. In plants, targeted genome modification has applications ranging from understanding plant gene function to developing crop plants with new traits of value. Our group has enabled efficient methods for targeted genome modification of plants using sequence-specific nucleases. With zinc finger nucleases (ZFNs), TAL effector nucleases (TALENs), and the CRISPR/Cas9 system, we have achieved targeted gene knockouts, replacements and insertions in a variety of plant species. Our current work is focused on optimizing delivery of nucleases and donor DNA molecules to plant cells to more efficiently achieve targeted genetic alterations.

https://www.voytaslab.com/