

Current Research Objectives

Dr. Fred Gmitter, Professor, Horticultural Sciences, CREC (fgmitter@ufl.edu)

Research topic: Citrus genomics

Primary Research Objective(s): Develop new citrus genome sequence resources.

Research Goal: Produce high quality and complete genome sequences of important citrus varieties, both tolerant and sensitive types. Such resources support many other kinds of research targeting solutions to HLB, including breeding, genome editing and genetic transformation, plant pathology, horticultural manipulations, and flavor science.

Outcomes to date: PI led the International Citrus Genome Consortium, which released the first high quality citrus genome assembly that remains the major reference citrus genome sequence for the wide range of research areas listed above. New genome sequences and their analyses have elucidated the evolution of citrus varieties and their relationships, thus informing future genetic improvement efforts to develop HLB tolerant or resistant varieties in the near future. New tolerant varieties have been planted, more than 1 million trees of UF-CREC developed citrus varieties in the last 3 years. New transgenic or genome edited trees are currently planted in field trials in Florida, to test their potential utility under real world conditions of endemic HLB exposure.

Funding source for this objective(s): CRDF; USDA-SCRI.