

THE PARTNERSHIP:

The relationship between HudsonAlpha and The American Chestnut Foundation began fortuitously at a meeting of the Alabama chapter of TACF. [Dr. Wallace \(Wally\) Kirkpatrick](#), Founder and CEO of [DESE Research, Inc.](#) in Huntsville and supporter of TACF, was in the audience during a presentation by Lisa Thomson, TACF President and CEO. Wally asked Lisa about what projects were strategic fundraising priorities for TACF. Tom Saielli, TACF's Southern Regional Science Coordinator responded that we needed to have a reference genome for American chestnut. Wally connected Lisa Thomson and Dr. Jared Westbrook, TACF Director of Science, with [Jeremy Schmutz](#), Faculty Investigator and co-director of the Genome Sequencing Center for [HudsonAlpha Institute for Biotechnology](#), Huntsville, AL.

2015 began the planning for the reference genome project.

The American Chestnut Foundation is collaborating with HudsonAlpha in Huntsville to sequence the genome of American chestnut. Assembling the American chestnut genome is foundational for future research into conserving genetic diversity and understanding the genetic basis for disease resistance in American chestnut backcross and transgenic populations that will be used for species restoration.

THE PROJECT:

Jeremy Schmutz leads the project to sequence and assemble the reference genome for the 'Ellis1' American chestnut tree from New York State. Researchers at State University of New York College of Environmental Science and Forestry inserted a gene from wheat into the genome of the Ellis1 tree to enhance its tolerance to chestnut blight. Pending regulatory approval by the federal government, this transgenic tree from New York will be bred with many wild American chestnuts to increase the genetic diversity of the blight tolerant population.

To date, HudsonAlpha has sequenced the Ellis1 transgenic founder tree's genome over 100 times using cutting edge DNA sequencing technology. This complex project will result in specific sequences using genetic maps developed for American chestnut. The American chestnut reference genome will catalyze research to accelerate the restoration of American chestnut by providing a molecular roadmap to help unlock the key to blight resistance.

Research for this project is supported by a grant from [The Colcom Foundation](#).

We would like to thank Dr. Wallace Kirkpatrick and DESE Research, Inc. for sponsoring the Hudson Alpha Tour and Board reception at Jackson Center, Huntsville on Thursday October 25, 2018. This event kicks off our 35th Anniversary Board and Annual meeting.