

Dr. William Lloyd MacDonald

Dr. William L. MacDonald is a senior faculty member at West Virginia University who has contributed significantly to the state's forests. Dr. MacDonald was born in Cincinnati, Ohio, in 1943 and attended both Miami University (of Ohio) and Iowa State University. For the past 38 years, he has lived in West Virginia and been involved in activities at the state, regional, national and international levels that have profoundly impacted the state's forests.

Dr. MacDonald came to West Virginia with an extensive background in vascular diseases of trees, which he applied to address the spread of oak wilt in the region's forests. Dr. MacDonald established European oak seedlings at the Plant and Soil Sciences Farm at WVU. He then exposed the trees to the oak wilt fungus and found they were highly susceptible. A quarantine was established to protect the European oaks, and a study involving government agencies, private industry and educational institutions resulted in the development of a fumigation protocol later adopted by APHIS.

For the past 30 years, Dr. MacDonald's research has focused on the study of the chestnut blight, with the goal of restoring this species to its former prominence. In his work, Dr. MacDonald has investigated the biology of the disease, evaluated various options for its control and worked tirelessly on multiple fronts toward its restoration.

In the early 1980s, a regional research project among the Northeastern Agriculture Experiment Stations was initiated to study chestnut blight. Dr. MacDonald was an initial investigator and played a major role in the project. A major finding was that naturally occurring viruses can debilitate the fungus and enable the tree to survive. Subsequent work has focused on the biological control of chestnut blight using these hypovirulent strains of the pathogens.

Another approach taken by investigators to combat chestnut blight is to breed disease-resistant trees. The American Chestnut Foundation has been the leader in this approach, and Dr. MacDonald has provided significant leadership to the organization. In its early years, he served as treasurer and as a board member. It was a struggling organization at that time, but has since grown to more than 4,000 members, a paid staff, scores of volunteers, a research farm and an operating budget of 1.4 million dollars. The approach of the Foundation has been to use traditional breeding techniques to incorporate disease resistance found in species related to the American Chestnut. Currently, genetically improved lines are being grown at various locations to evaluate their disease resistance and morphological features. One such location is at the WVU farm in Morgantown where Dr. MacDonald and his colleagues are in charge of the planting.

In 1997 and again in 2008, the chestnut blight regional research project received the U.S. Secretary of Agriculture's Honor Award for Excellence. Dr. MacDonald was named a Benedum Scholar in 1998, an honor bestowed on only the most outstanding of WVU researchers. In 2004, he received the Director's Award from the American Chestnut Foundation. Dr. MacDonald has taught both graduate and undergraduate courses in plant pathology, forest pathology, integrated pest management and urban forestry. He has been the academic advisor for 18 M.S. and 6 Ph.D. students. He has served as senior editor of *Plant Disease* and associate editor of the *Northern Journal of Applied Forestry*.

