

Project: Adaptation of Field and Forest Crops to Climate Change in the Southeast

Amount requested: \$1,000,000

Recipient: University of Tennessee Agriculture Institute

Address: 114 Morgan Hall, 2621 Morgan Circle Drive, Knoxville, Tennessee 37996-4500

Subcommittee: Agriculture

Project description:

This request will build on the collective expertise of a team of nationally and internationally known plant biologists and entomologists at the University of Tennessee and Oak Ridge National Laboratory, addressing the adaptation of field and forest crops, including biofuel crops, important to the Southeast to projected climate changes. Scientists predict that climate changes may impact the Southeast more than elsewhere in the US. Along with the increased ambient carbon dioxide concentrations and higher temperatures, this region will likely experience dramatic changes in precipitation, with both drier and wetter scenarios having been proposed.

These changes will have significant impacts on crop yields and forest productivity, each of which has a crucial place in the economy and culture of Tennessee and the Southeast. Since further climate change may be inevitable, it is urgent for us to respond now to reduce the vulnerability of agriculture and forestry to projected climate variability in our region.

We propose to conduct research for improved adaptation of agriculture and forestry to climate change in the Southeast. There are three specific objectives in this project.

The first objective is to better understand how field and forest crops important to the Southeast, including biofuel crops, are likely to be affected by projected climate stresses. The second objective is to better understand crop defenses against insect herbivores in relation to climate change. The last objective is to characterize the impact of climate change on germination and dormancy of seeds of crops and weeds.