Current Projects and Accomplishments:

The Sustainable Energy Research Center (SERC) is focusing on bioenergy crops as an energy source. Lignocellulosic crops are being researched to determine cultural practices, which optimize productivity potential.

Feedstocks research is being conducted with an emphasis on sustainable agronomic, economic, and environmental practices for the purpose of bioenergy production. The use of plants and trees to grow energy will result in less dependence upon foreign oil and reduce greenhouse emissions. Adding to the environmental benefits, feedstocks are a completely renewable resource, which can replace a portion of our energy needs.

Significant progress has been made in evaluating the effects of environmental stresses on castor, canola, switchgrass, and big bluestem. For example, SERC has found the high and low temperature tolerances of each of the above mentioned feedstocks. The period in which a feedstock grows after a period of dormancy, known as precocious germination, has increased from 38% to 70% through selective breeding. Sweet sorghum and energycane are showing promise as direct feedstocks in creating ethanol. Adding to these findings, progress has been made in understanding regulatory proteins important in cell wall synthesis.

Future Projects:

Replicated field studies will be conducted to characterize lignocellulosic crops while providing detailed information on weed and insect management and fertility requirements for optimum production of each. Concentrations of important characteristics of each lignocellulosic feedstock will also be determined using these same experiments. Also, certain crops will undergo physiological testing to determine the effect of environmental stress on crop growth and yield. These tests will further aid in the development of sustainable agricultural practices for bioenergy crops in the Southeast.