

ORNL-led team wins DOE bioenergy center

OAK RIDGE, Tenn., June 26, 2007 — A team led by Oak Ridge National Laboratory has won an award from the Department of Energy for a \$125 million bioenergy research center that will seek new ways to produce biofuels.

Funded by the Department of Energy's Office of Science, the DOE Bioenergy Science Center will be located on the ORNL campus in a new facility funded by the state and owned by the University of Tennessee. The center will employ the interdisciplinary expertise of the team's partners in biology, engineering and agricultural science and commercialization to develop processes for converting plants including switchgrass and poplar trees into fuels.

The two other DOE Bioenergy Research Centers are the DOE Great Lakes Bioenergy Research Center, led by the University of Wisconsin in Madison, Wisconsin, in close collaboration with Michigan State University in East Lansing, Michigan, and the DOE Joint BioEnergy Institute, led by the Lawrence Berkeley National Laboratory in Berkeley, California.

In announcing the awards, Energy Secretary Samuel W. Bodman said, "These centers will provide the transformational science needed for bioenergy breakthroughs to advance President Bush's goal of making cellulosic ethanol cost-competitive with gasoline by 2012, and assist in reducing America's gasoline consumption by 20 percent in ten years. The collaborations of academic, corporate, and national laboratory researchers represented by these centers are truly impressive, and I am very encouraged by the potential they hold for advancing America's energy security."

In addition to ORNL, the DOE Bioenergy Science Center partners include: the University of Tennessee, Dartmouth College, the University of Georgia, the Georgia Institute of Technology, the Samuel Roberts Noble Foundation, the National Renewable Energy Laboratory and companies ArborGen in Summerville, S.C.; Diversa in San Diego, Calif., and Mascoma in Cambridge, Mass. The team also includes seven individual researchers from across the country. ORNL's Martin Keller will serve as director for the center.

ORNL Director Jeff Wadsworth said the DOE project "will be a critical part of America's efforts over the next decade to develop alternatives to fossil fuels. I am proud that Oak Ridge will continue to play a leading role in addressing one of the nation's biggest scientific challenges."

Tennessee Governor Phil Bredesen noted that the DOE's award follows by two weeks approval by the state legislature of a \$61 million package for bioenergy research at ORNL and the University of Tennessee. The appropriation includes construction of a five million gallon-per-year pilot plant for demonstration of switchgrass-to-ethanol conversion based upon research at the DOE Bioenergy Science Center. "These two investments together position Tennessee and the South to be among the leaders in the emerging field of bioenergy," Bredesen said.

John Petersen, President of the University of Tennessee, said "The University of Tennessee is excited to be part of the DOE Bioenergy Science Center team. The center's cutting edge research will leverage the state of Tennessee investments in biofuels and make a lasting contribution to the nation's energy security."

The ORNL-led project will focus on improving dedicated biomass crops and new methods of processing plants into biofuel. The strategy involves breaking down into simple sugars the lattice of cellulose, hemicellulose and lignin that makes plant cell walls resistant to the stress of weather, insects and disease. These sugars can then be processed into fuel. To date, no cost effective bioprocessing methods for cellulose-based bioenergy sources have been developed. The DOE Bioenergy Science Center will focus on achieving the specific goals of:

- Modifying plant cell walls to reduce their resistance to breakdown, with a focus on the poplar tree—whose genome ORNL researchers helped sequence last year—and switchgrass, a native grass that can be grown easily in most of the U.S. Such modification would decrease or eliminate the need for costly chemical pretreatments to deconstruct the cell walls now required.
- Consolidated bioprocessing, which involves the use of a single microorganism or group of organisms to break down plant matter through a one-step conversion process of biomass into biofuels.

For more information about the three DOE Bioenergy Research Centers, see http://www.science.doe.gov/News_Information/News_Room/2007/Bioenergy_Research_Centers/index.htm.

For more information on the DOE Bioenergy Science Center, its partners and facilities, see <http://www.bioenergycenter.org>.

ORNL is managed by UT-Battelle for the Department of Energy.