

Welcome to Oak Ridge National Laboratory

Presented to

ORNL Women-Owned Small Business Day

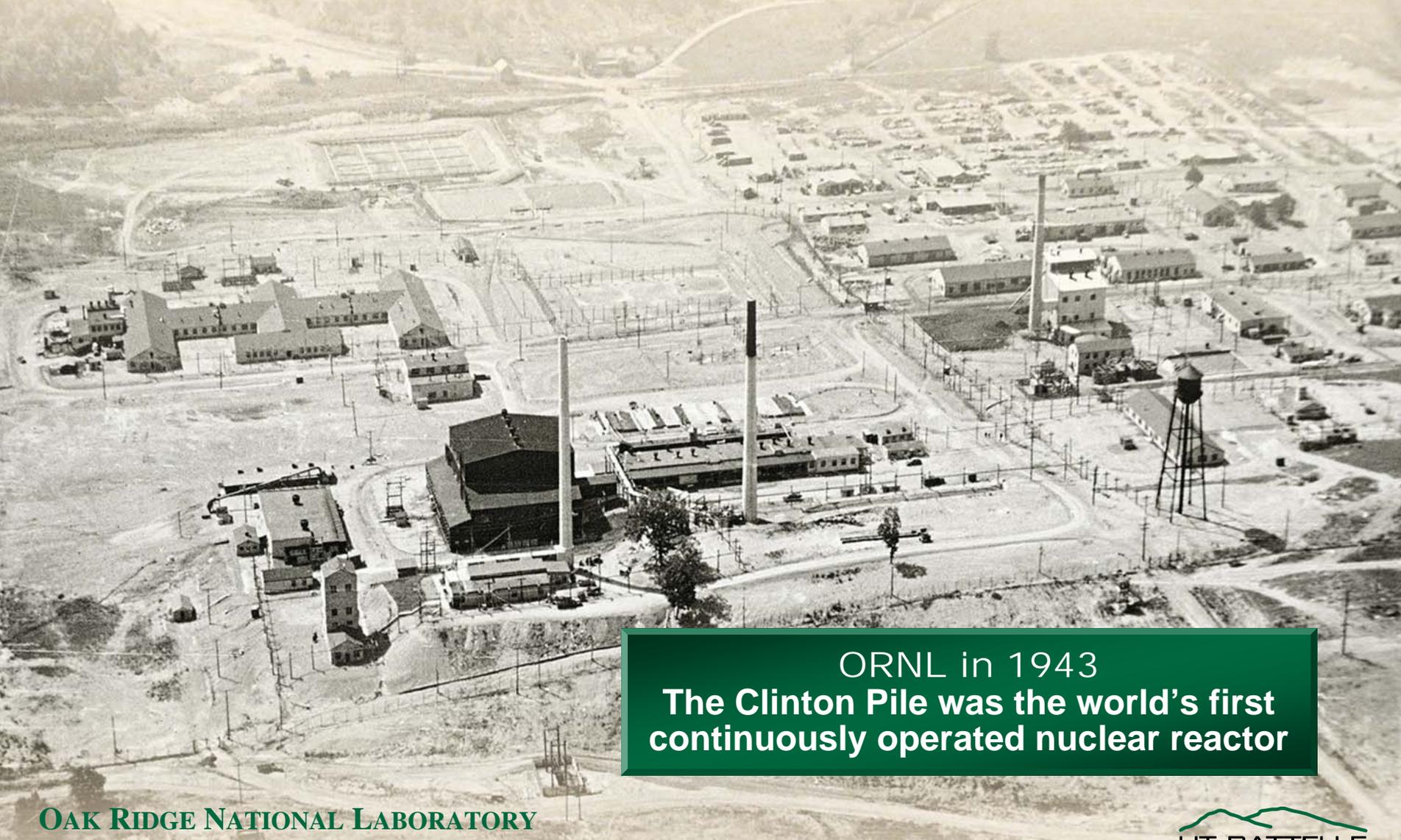
Jeffrey Wadsworth

Director, Oak Ridge National Laboratory

Oak Ridge, Tennessee

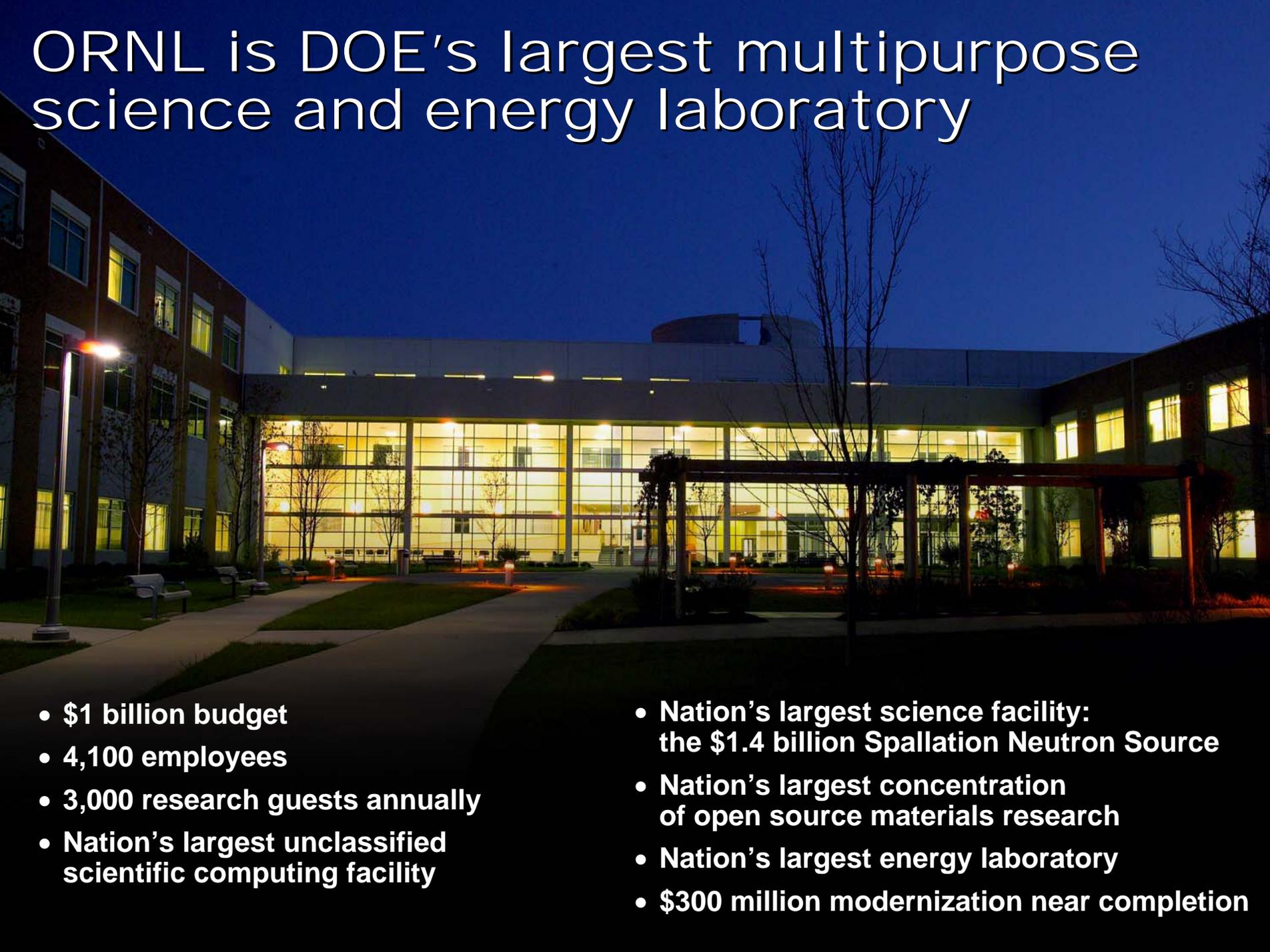
July 28, 2006

Oak Ridge National Laboratory evolved from the Manhattan Project



ORNL in 1943
The Clinton Pile was the world's first
continuously operated nuclear reactor

ORNL is DOE's largest multipurpose science and energy laboratory



- \$1 billion budget
- 4,100 employees
- 3,000 research guests annually
- Nation's largest unclassified scientific computing facility
- Nation's largest science facility: the \$1.4 billion Spallation Neutron Source
- Nation's largest concentration of open source materials research
- Nation's largest energy laboratory
- \$300 million modernization near completion

We apply our strengths in science and technology to six major missions

Our intent:

- **Lead the world in the tools and research applications of neutron scattering**
- **Understand and control material properties at the nanoscale**
- **Deliver sustained world leadership in computational science and engineering at scale**
- **Create breakthroughs in energy technology**
- **Understand and apply protein and other biologically significant molecular interactions in microbial and plant cells and communities**
- **Apply our S&T base to deliver “first-of-a-kind” security technologies and implement arms control and nonproliferation programs**

Studying materials with the world's best resources for neutron scattering

The \$1.4 billion Spallation Neutron Source is now in operation

DOE's first nanoscale science research center is producing exciting results

The upgraded High Flux Isotope Reactor offers complementary capabilities

The UT-ORNL Joint Institute for Neutron Sciences provides a user gateway for SNS and HFIR



Building on nanoscale S&T to produce breakthrough innovations

Advanced Microscopy Laboratory



- **World's highest resolution microscopes**
- **Direct images of single atoms**

Center for Nanophase Materials Sciences



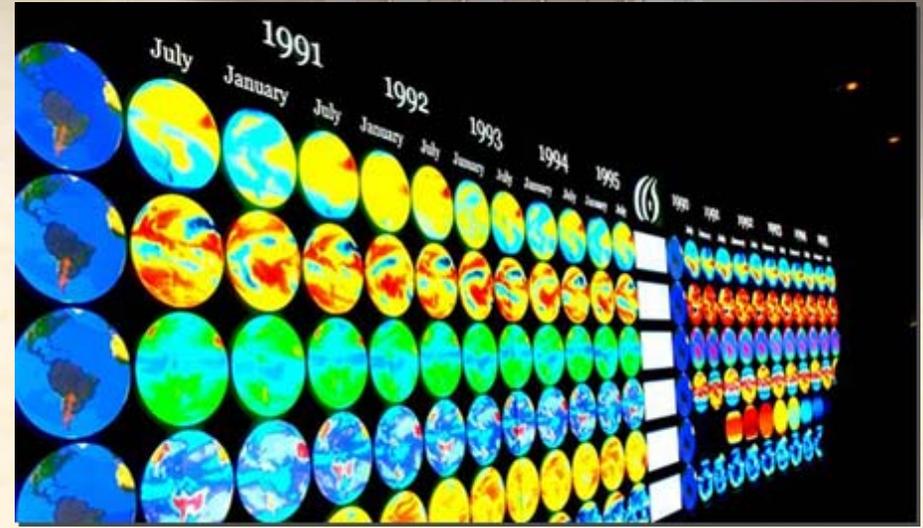
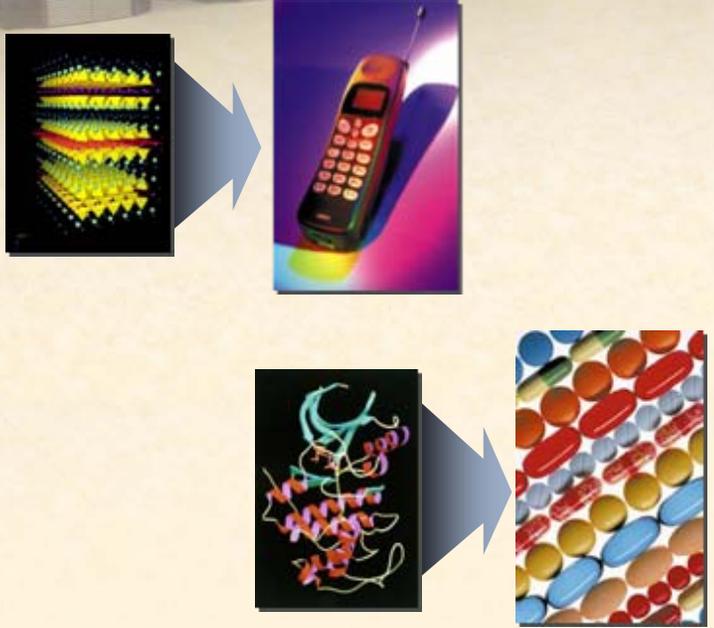
- **DOE's first nanoscale science research center**
- **Will use neutrons from SNS to study material properties**

Joint Institute for Advanced Materials



- **To be constructed at UT's Knoxville campus**
- **Focus: Biomaterials, nanotechnology, and transportation systems**

Applying the nation's fastest scientific computers to challenging problems

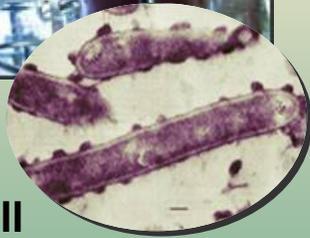


Transforming the new biology into bioenergy

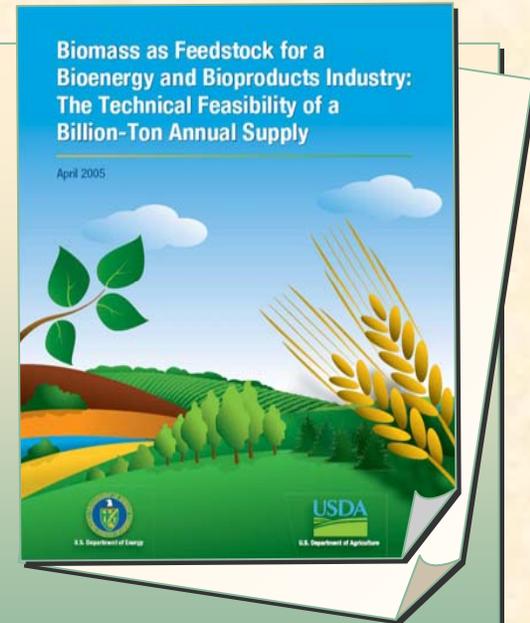
Integrating our programs in genetics, biotechnology, process chemistry, and engineering to deliver biofuels



Clostridium thermocellum breaks down cell walls to enable ethanol production from cellulose



Sequencing of poplar genome will lead to trees that produce more biomass for conversion into fuel



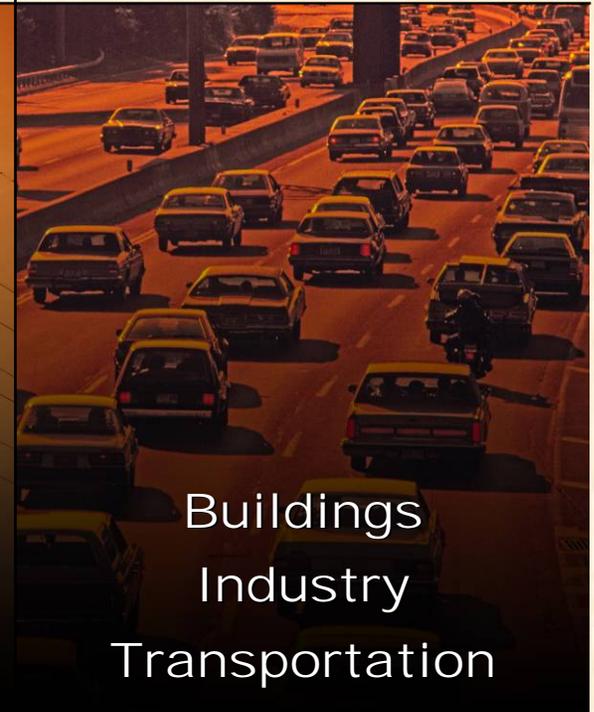
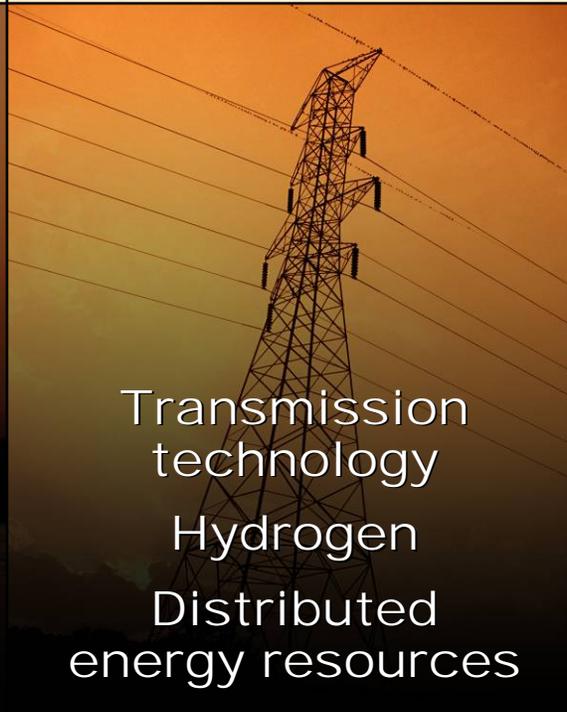
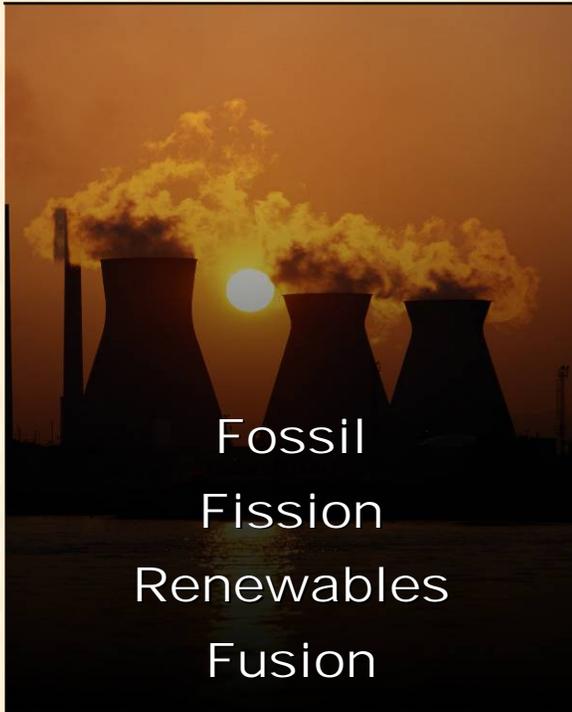
Biofuels can displace 30% of imported oil

Addressing the energy challenges of the present . . . and the future

Generation

Distribution

Consumption



Supporting DOE's strategic goals
for energy security and independence

Applying our S&T resources to national and homeland security

- **Detecting, preventing, and reversing the proliferation of weapons of mass destruction**
- **Deploying integrated systems for incident awareness, detection, and response**
- **Providing technology for detecting explosives at the part-per-trillion level**
- **Delivering enhanced protection and new capabilities to first responders and warfighters**





Building a
research campus for
the next generation
of great science

We are committed to being a valued community partner

Legacy investments in four areas



**Science
Education**



**Civic and
Cultural Events**



**Corporate
Volunteerism**



**Economic
Development**

Partnerships are essential to our success

We are committed to:

- **Working with the East Tennessee business community**
- **Providing opportunities for small businesses to supply us with goods and services**



ORNL received the 2005 SBA Eisenhower Award for Excellence in Small Business Contracting

<http://www.ornl.gov/smallbusiness>
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Oak Ridge National Laboratory: Ready for the challenges of the 21st century

