

Oak Ridge National Laboratory: Delivering 21st Century Science and Technology



Presented to
National HBCU Week
Conference

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Management/
Small Business Program**

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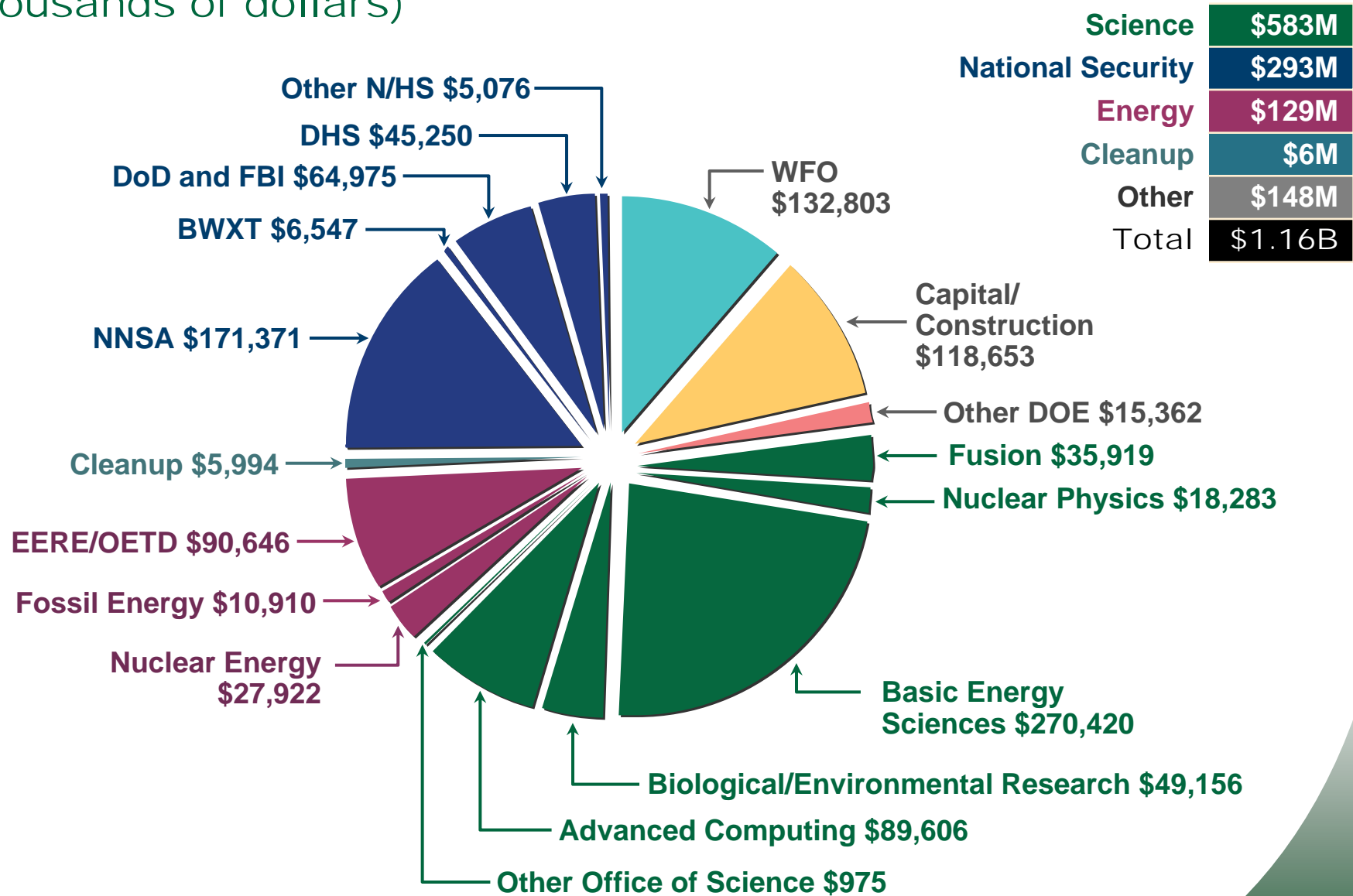
ORNL is DOE's largest science and energy laboratory



- **\$1B budget**
- **4,200 employees**
- **3,000 research guests annually**
- **\$350 million invested in modernization**
- **World's most powerful open scientific computing facility**
- **Nation's largest concentration of open source materials research**
- **Nation's most diverse energy portfolio**
- **Bringing the \$1.4B Spallation Neutron Source into operation**
- **Managing the \$1.1B U.S. ITER project**

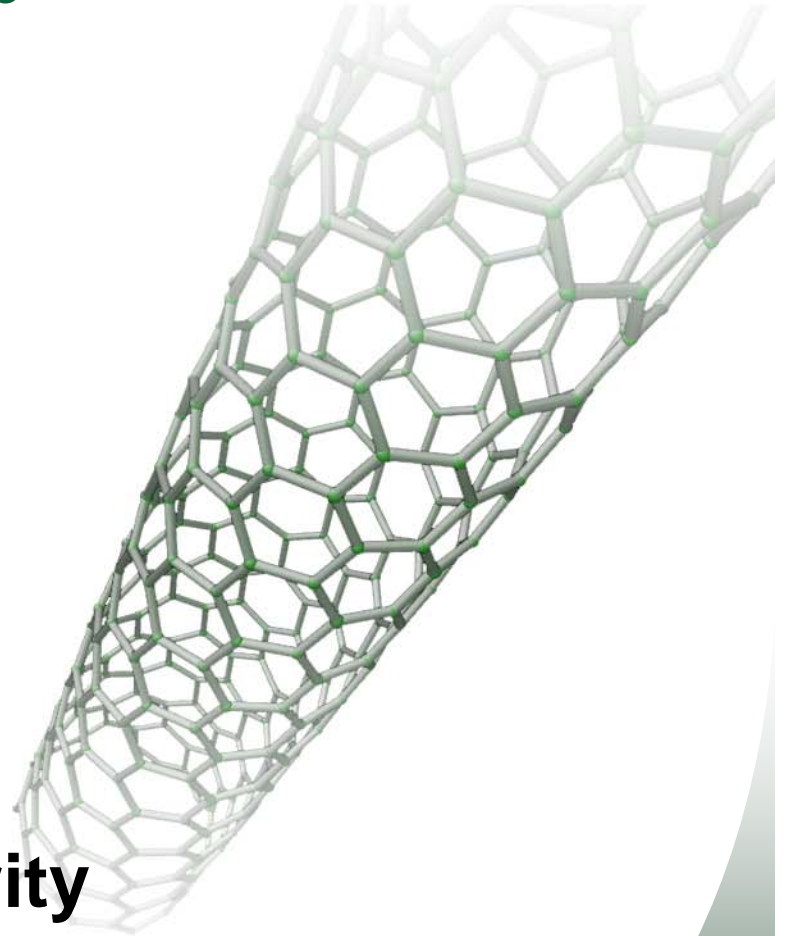
ORNL's FY07 budget

(thousands of dollars)



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

- **Neutron sciences**
- **Advanced materials**
- **Ultrascale computing**
- **Systems biology**
- **Advanced energy systems**
- **National and homeland security**



Putting the world's best tools for neutron scattering to work

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

The upgraded High Flux Isotope Reactor offers complementary capabilities

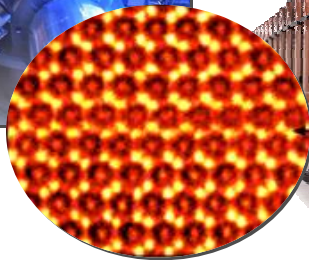
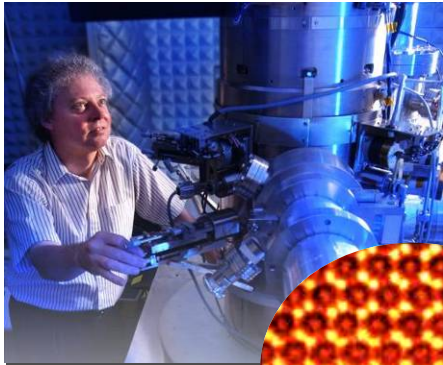
Thousands of researchers will come to Tennessee each year to use these facilities

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

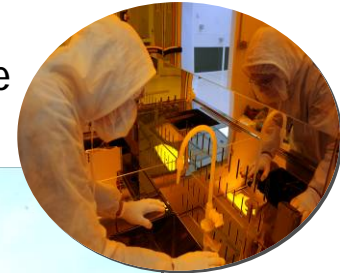


Expanding our understanding of materials

World's highest resolution electron microscope



DOE's first nanoscale science research center



Hundreds of industry partners, thousands of university users

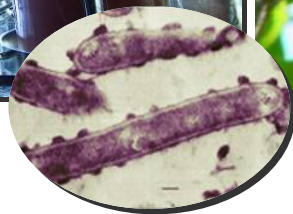
Leading the development of petascale scientific computing

- **Addressing the nation's most compelling science and technology questions**
 - Climate
 - Fusion
 - Materials
 - Biology
- **Operating the world's most powerful open scientific computer**
- **On track to deliver 1-petaflops computing in 2008**



Transforming the new biology into bioenergy and biomaterials production

Developing biobased solutions for energy, the environment, and carbon sequestration



Partnering with the University of Tennessee to develop a 5M-gal/year cellulosic ethanol research and demonstration facility

Exploring how ecosystems respond to global and regional change

Plant sciences



Carbon cycle and ecosystem research



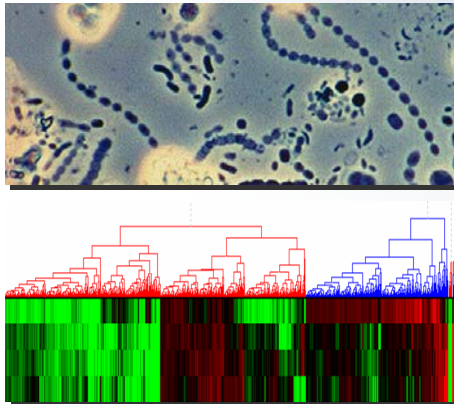
Subsurface science



Ecological management



Microbial ecology and functional genomics

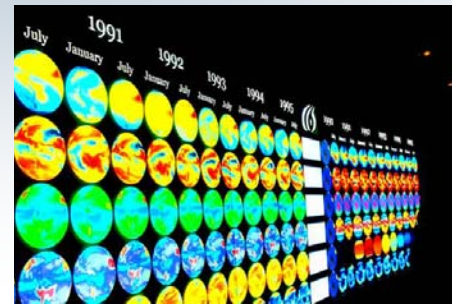


Detect, model, and simulate environmental responses

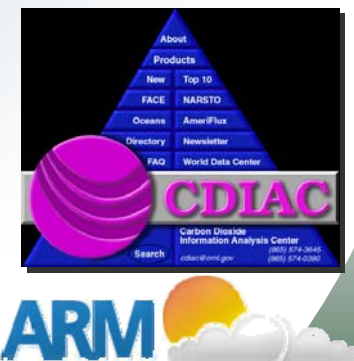
Society-technology interfaces



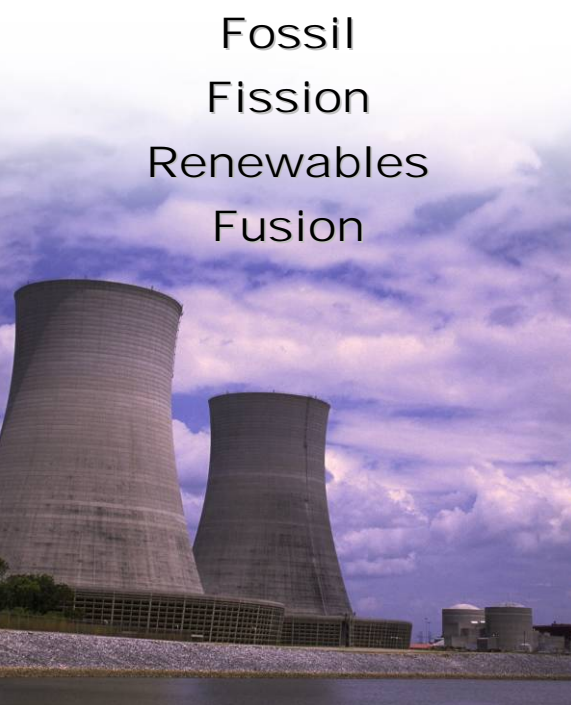
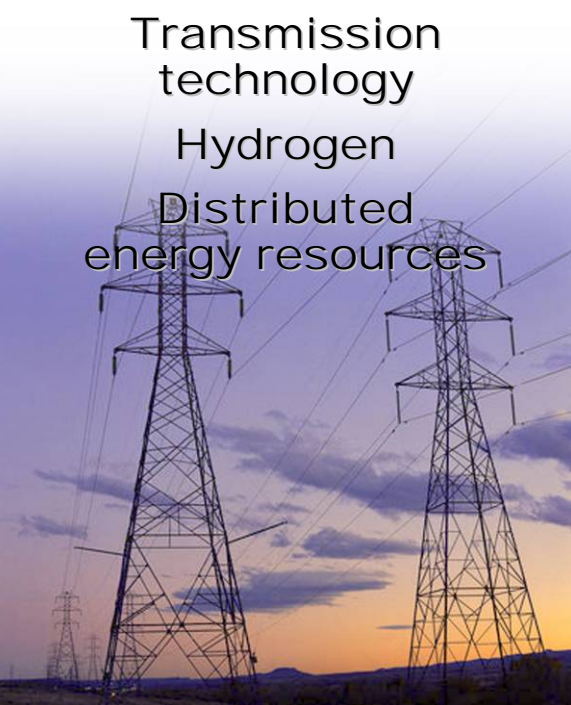
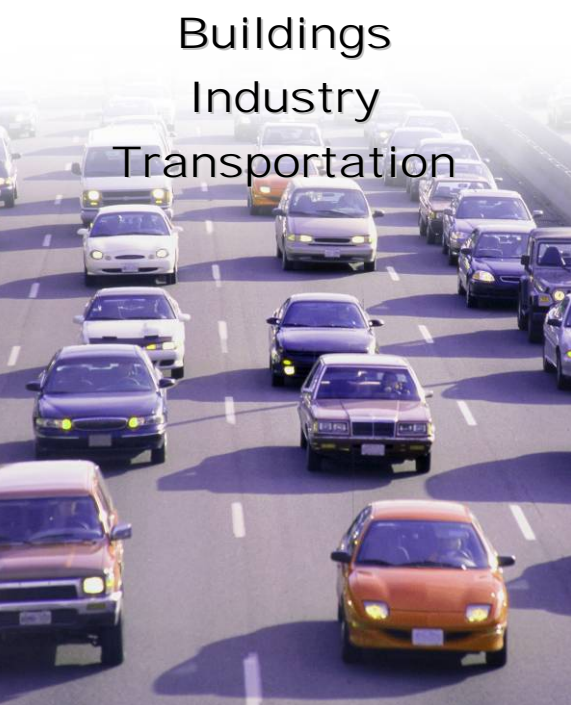
Global climate simulation



Environmental data systems

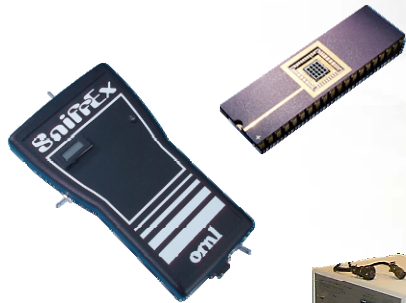


Addressing the energy challenges of today . . . and tomorrow

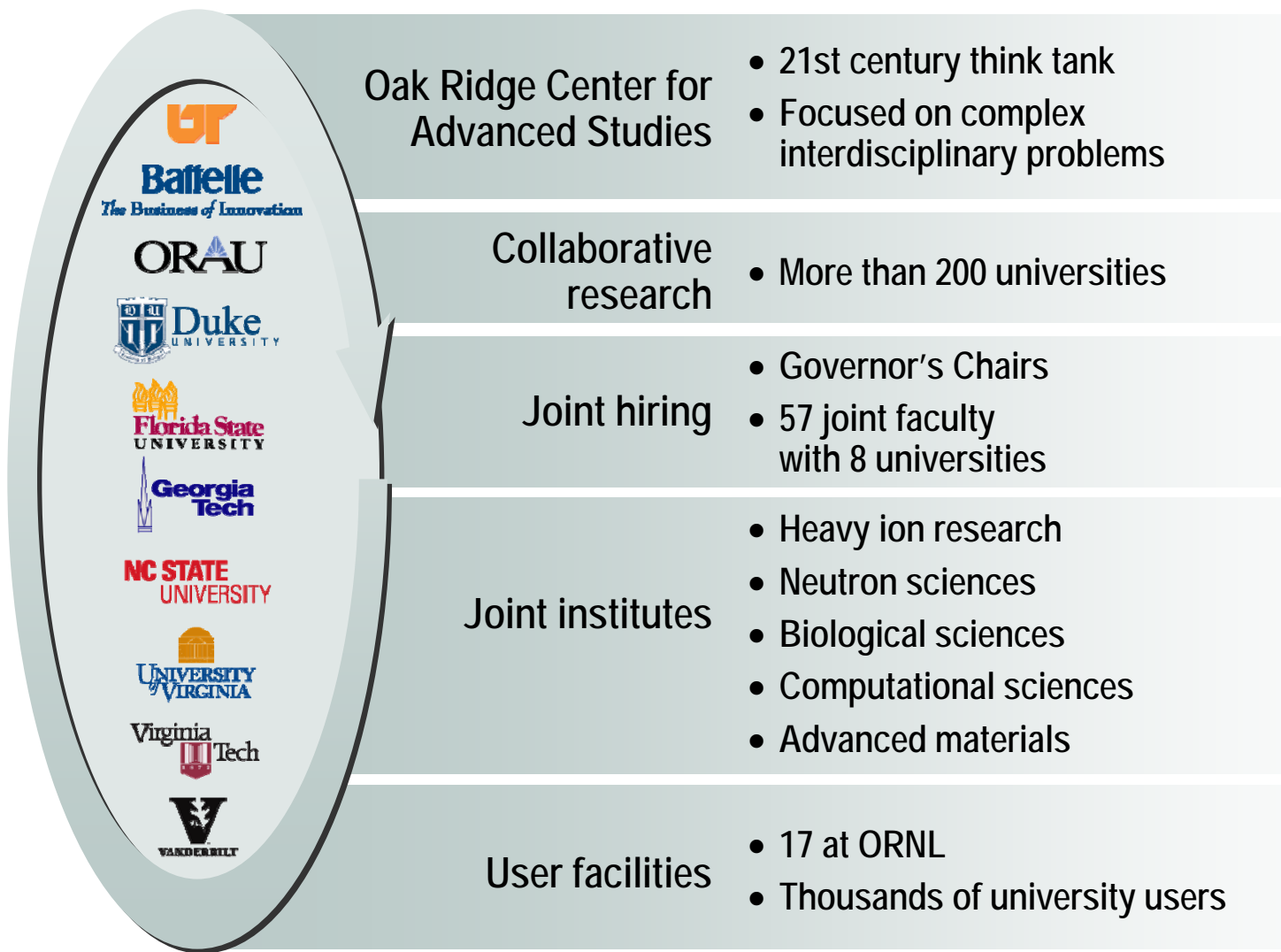
Generation	Distribution	Consumption
<p>Fossil Fission Renewables Fusion</p> 	<p>Transmission technology Hydrogen Distributed energy resources</p> 	<p>Buildings Industry Transportation</p> 

Supporting DOE's strategic goals for energy security and independence

Enhancing national and homeland security

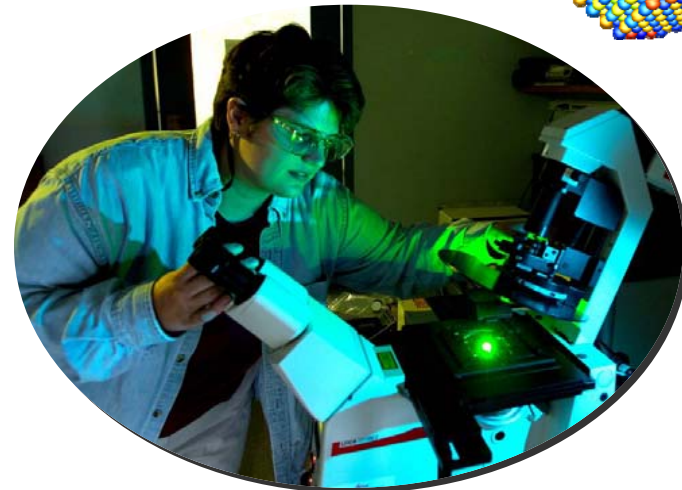
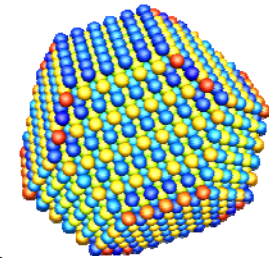


We are committed to strong university partnerships



A variety of robust programs support these partnerships

- **Collaborative research across ORNL's agenda**
 - From bench-level collaborations to multinational partnerships
- **Research and educational opportunities at ORNL for faculty members, students, and recent graduates**
 - Fellowships
 - Internships
 - Research participation programs
- **Distinctive scientific user facilities**



Serving the community as a valued partner

Legacy investments in four areas



**Science
Education**



**Civic and
Cultural Events**



**Corporate
Volunteerism**



**Economic
Development**

Technology transfer and economic development

- **Applying ORNL's ideas, technologies, and facilities to marketplace opportunities**
- **Creating partnerships to expand access to ORNL capabilities**
- **Providing technical assistance**
- **Supporting the creation and growth of new businesses**
 - 74 new businesses since April 2000
- **Investing in economic development**
 - Center for Entrepreneurial Growth



Day of Science will be on October 28-29, 2007

Purpose

- Increase the number of students taking our internships
- Get faculty more aware of the programs and possibilities at DOE

2007 Event

- More than 1,000 of the nation's best and brightest students from the sciences and other disciplines to attend, along with several hundred outstanding faculty members.
- This year's program will showcase internships and career information, research opportunities, hands-on scientific demonstrations, and technical assistance programs.
- Talks about DOE and DOE Labs, and interactions with research exhibitors.
- Jobs, subcontracting and grant opportunities.
- Graduate recruiting table for each core university.



DOE Mentor-Protégé Program

- **Encourages DOE laboratories to assist HBCU/MEIs**
- **An agreement to establish a partnership for two/three years**
- **Explore ways to assist MEIs to build capacity**



Morehouse College Signs Mentor Protégé Agreement

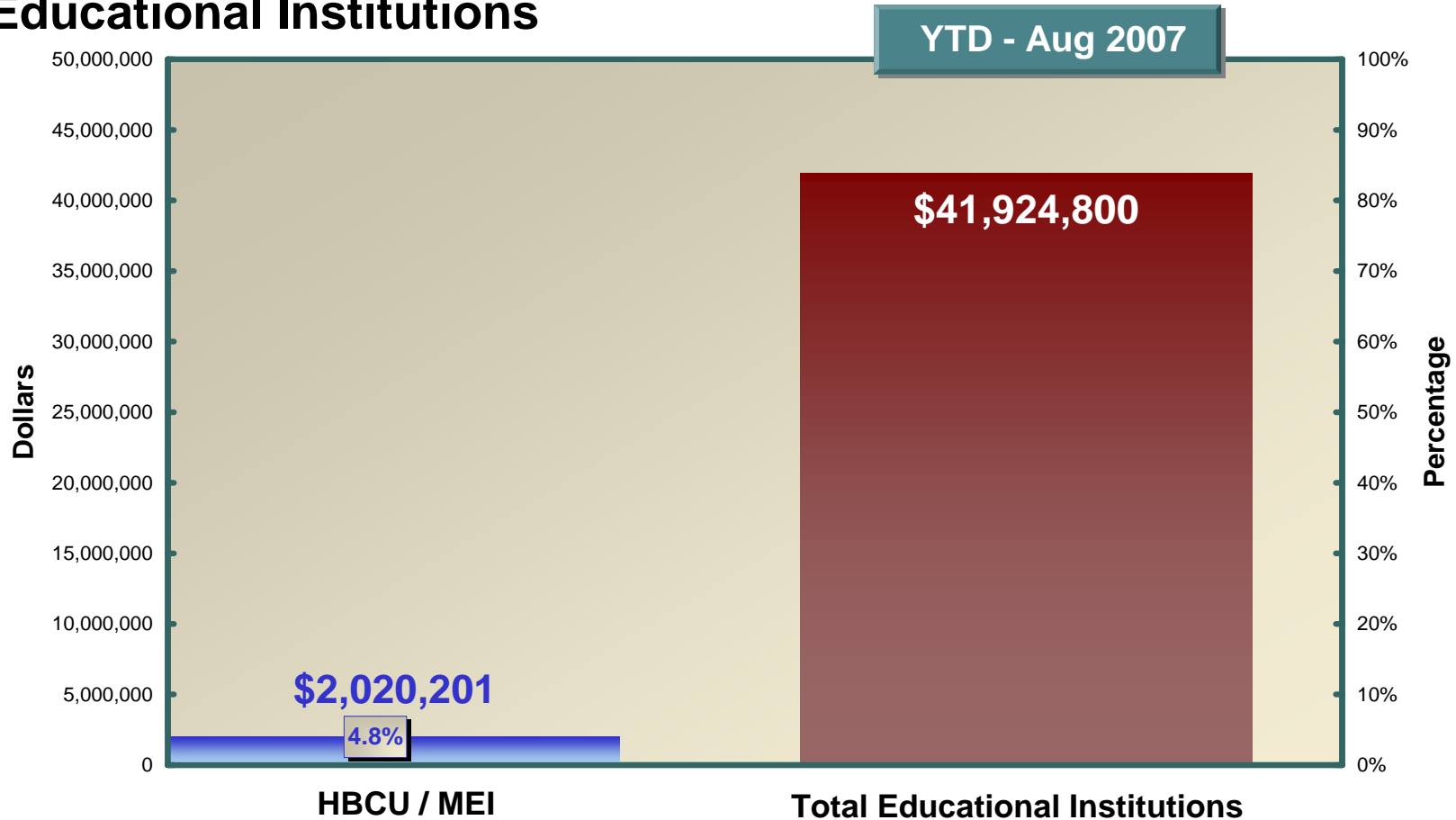


Oak Ridge National Laboratory (ORNL) and Morehouse College, an historically black college and university (HBCU), have signed a Mentor-Protege Agreement, the first such agreement between an HBCU and a DOE Office of Science lab. The new joint initiative will assist students in the college's science programs and promote research collaboration at both institutions.

On July 27, 2007, Under Secretary of Science Dr. Raymond L. Orbach hosted representatives of ORNL and Morehouse at a ceremony honoring the agreement. Pictured are (seated from left) Dr. Thom Mason, Director, ORNL; Phillip Howard, Vice President, Morehouse College; Under Secretary for Science Orbach; (standing from left) William Valdez, Director, Office of Workforce Development for Teachers and Scientists, DOE Office of Science; Dr. James Page Brown, Director, Office of Research Careers, Morehouse College; and Theresa Alvillar-Speake, Director, DOE Office of Minority Economic Impact and Diversity.

Subcontracting with ORNL

Percentage of Subcontracting Dollars Placed with Educational Institutions



	1995*	1996*	1997*	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007 YTD	2008
HBCU/MEI	\$632,011	\$771,658	\$760,763	\$205,962	\$734,143	\$274,295	\$603,640	\$437,519	\$291,264	\$175,335	\$341,946	\$47,157	\$2,020,201	
Total Educ.	\$33,547,235	\$31,560,026	\$29,648,607	\$20,139,686	\$19,905,997	\$22,734,618	\$24,521,870	\$23,939,642	\$24,982,324	\$33,058,737	\$30,135,377	\$30,212,619	\$41,924,800	
% of HBCU/MEI	1.9	2.4	2.6	1.0	3.7	1.2	2.5	1.8	1.2	0.5	1.1	0.2	4.8	

* Included both Educational and Non-Profit Dollars

Base = All Educational Dollars. Source: BW Proc Stats 2

SELA/EducCompare.xls

9/6/2007

Educational Awards FY 2007

- **Algorithm Development**
- **All Hazards Emergency Operations Management**
- **Analysis of Beam Measurement Techniques**
- **Analysis of Proliferation Trade Control**
- **Bioinformatics Tools**
- **Chemical Analysis**
- **Data Transfer Subsystem Research**
- **Disaster Response Intelligent System**
- **Geophysical Field Research**
- **Economic Impact Study**
- **Materials Research**
- **Nanophase Materials Research**
- **Organize Conference**
- **Power Grid Research**
- **Water and Dam Vulnerability Assessment**

Marketing to ORNL

- **Visit the ORNL Website and get to know us via the Internet**
- **Send Your Capability Document to Our HBCU/MEI Program Office**
- **Request a visit by our staff or make an appointment and visit and tour the Lab**
- **Matchmaking with our Principal Investigators is Important**
- **Fully understand Government Contracting**
- **Keep in Touch with our program office**

Oak Ridge National Laboratory:

Meeting the challenges of the 21st century

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Web Pages

<http://www.ornl.gov/smallbusiness/mei/>

<http://www.ornl.gov/>

<http://www.ornl.gov/dayofscience/>