



# A-E-I-O-U and sometimes ORAU

## Organizations stemming from Oak Ridge’s scientific establishment work to boost science education in the region and beyond

**I**t may look like another helping of alphabet soup coming out of Oak Ridge, Tenn. ORAU, ORISE, ORNL, UT-Battelle, DOE. But the explanation is as simple as A, B, C.

Ask any one of the thousands of people linked with the Oak Ridge Associated Universities, and they’ll say this grouping of U.S. Department of Energy contractors is doing something to combat the lack of quality science education in this country.

At the epicenter of this effort is ORAU, an Anderson County-based nonprofit that operates like a chamber of commerce for 96 universities across the globe. (All members must offer doctoral degrees.) ORAU, with over 500 permanent employees, operates on a \$200 million annual budget with roughly half dedicated to its science education.

Through ORAU, these institutes of higher learning share a common goal: To advance scientific research and education by getting their best and brightest students working on projects with the government, in private sector industries and at other universities. Students from any of the member universities can apply for a seemingly endless list of programs, many of which could land them in Oak Ridge.

That’s where the ever-present Oak Ridge National Laboratory comes in. ORNL is managed by UT-Battelle, a 50/50 partnership between the University of Tennessee and Columbus, Ohio-based technology business and laboratory manager Battelle—all for the DOE.

ORNL, UT-Battelle and DOE provide the opportunities; ORAU brings the students. You can find over 1,000 students in Anderson County at any time taking classes,

sleeping in hotel rooms and eating at restaurants. The result is more top-level science professionals with the academic prowess to keep the United States competitive with other countries.

It’s a refreshing contrast to the relentless influx of media reports criticizing the United States for its deteriorating status as a global leader. True, not enough



Oak Ridge Associated Universities

American school children are testing well in science and mathematics—a phenomenon that is threatening the pipeline of future innovators. It’s all the more ironic that the territory that is itself a science Mecca isn’t faring much better than the status quo.

“The quality of education in schools in Tennessee is abysmal. We don’t compete nationally. Education is a top priority, but no one is willing to pay the money to invest,”

PHOTOS COURTESY OF OAK RIDGE ASSOCIATED UNIVERSITIES



Future teacher

says ORAU President and CEO Ronald Townsend.

Who has the answer? Go back to the alphabet soup and pull out the ORISE acronym. The Oak Ridge Institute for Science and Education is part of ORAU that makes even the youngest students and the most novice science teachers a priority.

“The time to ‘get’ to students gets younger, back to seventh and eighth grade and even younger,” Townsend says.

While the need is great, no one is getting a handout. ORAU’s diverse suite of academic programs comes with travel grants, funds to cover living expenses and seed money for proposals. Interested educators and students endure an extensive application process for internships and summer research projects. Only a limited number of spots are available, and the mentors leading the programs select the lucky few.

Mike Smith made the cut and recently completed a three-year stint with an ORNL research team studying fish that live near TVA dams. The only high school science teacher at

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## Junior Achievement – JA Biz Town

**W**hat do kids these days want to be when they grow up? Today, they may want to be a firefighter or a ballerina. But after a one-day stay in Anderson County's newest community, those answers may switch to store manager, product developer or even mayor.

Last September, Junior Achievement of East Tennessee broke ground on JA Biz Town, a simulated city complete with shops, services and government offices all run by public school children.

The \$8 million project will open for business in January 2008 and will operate in a similar fashion to Nashville's JA Exchange City, using hands-on experiences to help students understand the economics of life. This program is geared toward fifth-graders.

Within the JA's 13-county region, several locations were con-

sidered for Biz Town. "Anderson County really wanted it," says Allen Lutz, education director with Junior Achievement of East Tennessee, which is evident as the county's government leased the land to JA for a mere \$10 per year.

Many area businesses are JA believers, having financially backed this project, but none more fervently than Clinton-based developer, Joe Hollingsworth, and his wife, Marsha, who were the lead Biz Town donors. Although the amount was not made public, it was higher than \$1 million, which was given by Blount County's Jim Clayton of Clayton Homes fame.

The new JA building near Clinton will also serve as the new home for JA of East Tennessee offices, which are currently located in an old, two-room schoolhouse in Knoxville. **tn**

**They've had to change some of the answers**

**Multiple Choice Entrance Exam**

14. The world's most powerful open computer is being built in \_\_\_\_\_

15. The world's most powerful machine for the study of materials is in \_\_\_\_\_

16. The largest electron microscope in the world is located in \_\_\_\_\_

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Coalfield School K-12 in rural Morgan County, Smith says his experience taught him ways to get his students more excited about science.

"It was a thrill to get to do research—real hands-on science. This program taught me to teach in an inquiry style, thinking scientifically. [ORNL is] not a cookbook-style lab," Smith says.

A popular and committed teacher—he also drives a school bus—Smith uses his planning period to teach scientific research, while still managing daily to fit in courses in ecology, physical science, chemistry, human anatomy and physiology, and two levels of biology.

Smith's ORNL training has already reaped benefits for his school. Coalfield students received six of the 11 awards in the 54th annual Southern Appalachian Science and Engineering Fair in 2006, including a \$750 scholarship winner who will advance to the international Intel competition in May.

When it comes to "getting" to students interested in careers in science, the earlier, the better. Yet, ORAU's Townsend agrees that Dolly Parton's Imagination Library has been the organization's single best investment.

In 2001, the consortium was "the first to leverage the Dollywood Foundation to bring the [book program] to Anderson County," Townsend says. To date, 50,000 books have been distributed to 3,500 children across the county.

The resources stemming from ORAU's connections for every facet of a child's education, all the way through his or her career, is impressive. But no matter how much opportunity is out there, a solid educational foundation begins in the home.

So while there are still plenty of reasons to be worried about the state of education in Tennessee, one can take solace in the fact that Anderson County's alphabet soup is doing it part to boost the quality of the state's science education. **tn**

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