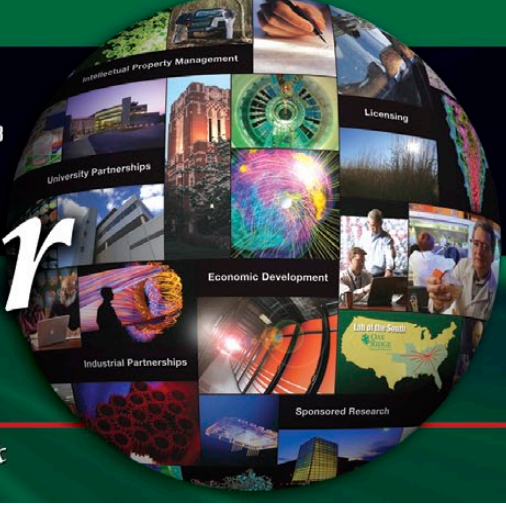
PARTNERSHIPS
ISSUE 2 2008
Newsletter
Putting Science to Work



Tom Rogers

Blake Thompson

Partnerships Directorate People

Rogers, Thompson Named New Directors

New directors in the ORNL Partnerships Directorate are Tom Rogers and Blake Thompson.

Rogers, former president and CEO of Technology 2020, is the new director of Industrial and Economic Development. He has been involved in economic development work for nearly 30 years.

Thompson, former deputy staff director of the U.S. Senate Committee on Appropriations, is the new director of University Partnerships. He served as principal advisor to Sen. Thad Cochran of Mississippi, Ranking Member of the committee responsible for more than $850 billion in federal expenditures.

Rogers started his career at the Tennessee Valley Authority, where he served as chief of Economic Development Programs before becoming president of the Oak Ridge Chamber of Commerce and eventually president and CEO of Technology 2020.

"Tom is one of the best-known economic development administrators in the region," said Tom Ballard, Partnerships director. Rogers assumes the position that Ballard vacated in January when he moved into his current job.

"ORNL is a fascinating place, and I'm excited about joining the team and helping even more companies leverage the incredible resources here," Rogers said. "Tech 2020 has been a close partner with ORNL, and this seems a natural transition and a terrific opportunity. I'm confident that Tech 2020 is poised for continued success, and that the organization's best days still lie ahead."

Ballard noted that Rogers and his Technology 2020 team played a key role in helping UT-Battelle deliver on its commitment to spawning more entrepreneurial activity locally since UT-Battelle began managing ORNL in 2000. Rogers worked with

(continued on page 8)

Technology Events

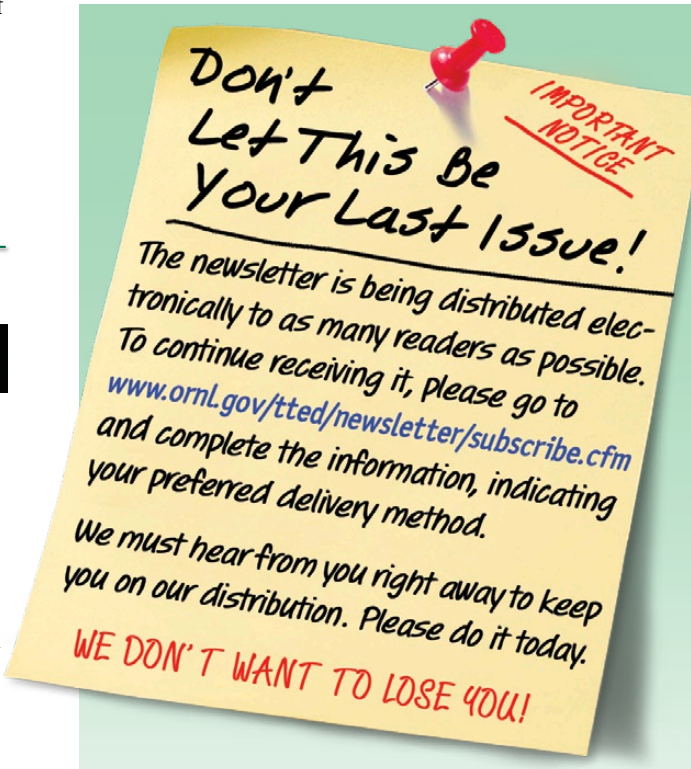
GlobalVenture Challenge 2008

UT Team Wins Venture Challenge

For the second year in a row, a team from a "UT" institution won the top prize in the Global Venture Challenge held at ORNL. This year, the "T" read as "Tennessee," not "Texas."

While this year's competition featured prestigious universities from throughout the United States and the United Kingdom, a team of high school students from Merrimack, N.H., won the hearts of fellow competitors and, in the end, won praise from a team of seasoned venture capitalists who judged the finals.

(continued on page 3)



The ORNL Partnerships Directorate seeks to foster economic development and the growth of business and industry by making available the most innovative equipment, the latest technology, and the expertise of ORNL researchers to technology-based companies and research universities throughout the nation.

MESSAGE FROM THE DIRECTOR

Tom Ballard

This issue of the Partnerships newsletter carries many articles describing ongoing activities that better connect ORNL to the local area, southern region, and beyond. This is nothing new; we have articles like these in every issue. The success of these activities, however, is largely dependent on the creativity, initiative, and commitment of those who lead them. In this issue, we spotlight three individuals – two new hires and a third who is part of a pilot U. S. Department of Energy project – who are playing critical roles in activities that will impact the work of the Partnerships group for years to come.

Blake Thompson, former deputy staff director of the U. S. Senate Committee on Appropriations, joined ORNL in mid-March as director of University Partnerships. While he is a new hire for ORNL, he is certainly no stranger to our work. Blake was integrally involved in a number of the "Lab of the South" activities in Mississippi ranging from the Southeast Region Research Initiative in homeland security to work with several Mississippi start-ups. Blake is based in the Partnerships' offices with a direct reporting relationship to the deputy lab director for Science and Technology. His national perspective, broad-based experience, and natural inquisitiveness ensure that new, exciting partnerships with universities will emerge for ORNL.

Another new hire is Tom Rogers, who is also no stranger to ORNL and the Partnerships group. Tom started June 1 as Director of Industrial and Economic Development Partnerships, a position "near and dear" to me. For the past 12 years, Tom has headed Technology 2020, the most strategic of our local partners. Tom brings a long-standing passion for entrepreneurship, more recent success in helping connect industry-based researchers to ORNL as part of our Innovation Valley Nano Alliance, and a "get-it-done" track record. As we work with the various research directorates to pursue more work with industry, Tom's leadership will be critical.

The third person is Michael Bauer, ORNL's first "Entrepreneur in Residence," who is part of a DOE pilot program designed to accelerate deployment and commercialization of advanced clean energy technologies into the global marketplace from ORNL, Sandia National Labs, and the National Renewable Energy Lab. The focus on energy efficiency and renewables is very important to the future of our country, but the broad lessons learned from the pilot project should help us be even more successful in working with entrepreneurs on the commercialization of technologies, regardless of their research areas.

In the end, success is as dependent on great people as our sustainable partnerships with organizations. We're excited about the talents that Blake, Tom, and Michael bring to the mix.

DOING BUSINESS WITH ORNL

Safeguards Laboratory Now National User Facility

The Safeguards Laboratory (SL) at ORNL formally became operational as a user facility earlier this year. In addition to providing services for its customers under Work for Others agreements, the facility also helps address a need for providing access to certain sealed radioactive standards – such as Special Nuclear Materials – that are not readily available through private or public avenues. The SL provides an internationally recognized capability for conducting hands-on testing, evaluation, and validation of radiation measurement equipment, as well as customized training for integrated safeguards methods, procedures, and instrumentation. It is devoted to research and international collaboration through the International Safeguards Program and the Nuclear Securities Technology Program.

From left, Angela Thornton, Belle Upadhyaya, and Jairus Hines look at equipment during the Open House for the new Safeguards Laboratory User Facility.

Members of the SL staff include internationally recognized nuclear engineers, certified health physicists, nondestructive analysis experts, and international safeguards experts. Customers and users include corporations in the private sector radiation detection industry, university nuclear engineering and nonproliferation programs, the Department of Energy, DOE/National Nuclear Security Administration, the Department of Defense/Defense Threat Reduction Agency, national laboratories, the International Atomic Energy Agency, and foreign safeguards organizations.

The SL user facility is accessible to everyone, including employees, nonemployees, U. S. citizens, and foreign guests.

(DOING BUSINESS continued on page 11)

TECHNOLOGY EVENTS (continued from page 1)

UT Team Wins Venture Challenge continued

The 2008 GVC, renamed from Nano Nexus 2007, is a combination student business plan competition and venture forum for area companies. The two-and-one-half day event is designed to encourage more entrepreneurship among students and promote the commercialization of intellectual property. Student teams develop business plans that they must present to a set of judges. The questions that follow match the types of inquiries they will receive as they try to secure funding from real investors for their start-up companies. The second afternoon also features a real venture forum where area start-ups pitch their companies to venture capitalists.

Alan Liby and Tom Ballard of ORNL's Partnerships Directorate confer with Bloom Energy CEO KR Sridhar (right) who was the keynote speaker for GVC.

This year's GVC, which focused on technologies in the energy efficiency and renewable energy portfolios, featured the first high school team to ever enter and the first tie among the four winners.

The Tennessee Volantis team, one of two UT entries, captured the top position and a performance-based award of $25,000 for its plan, which was based on using an ORNL technology to coat the hulls of ships. A second UT team, UT-Airflow Hybrid, tied for runner-up with the Merrimack High School team, which presented its Bio-Buddie 2000, a miniature processor for biodiesel fuel that would be marketed as an educational tool for secondary schools. Both received performance-based awards of $7500. Fourth place and a $2500 award went to a team from the University of California, Berkeley. Other finalists – from Cornell and the University of Texas – earned $750.

Fourteen teams competed in the semifinals on the second morning of the event. They were selected from entries submitted by about two dozen universities from throughout the world. ORNL staff, area entrepreneurs, and some venture capitalists judged the semifinals and selected the six finalists.

Bloom Energy CEO KR Sridhar, who served as keynote speaker for the event, was impressed with what he saw during the competition. "The outreach activities and the venture challenge at Oak Ridge are quite impressive – clearly what our nation needs to maintain technology leadership," he said.

> "The outreach activities and the venture challenge at Oak Ridge are quite impressive – clearly what our nation needs to maintain technology leadership."
>
> *– KR Sridhar*

ORNL's Partnerships Directorate serves as lead sponsor but relies on a number of other organizations to ensure a successful event. They included the Department of Energy's Energy Efficiency and Renewable Energy Program, ORNL's BioEnergy Science Center, Oak Ridge Associated Universities, Tennessee Valley Authority, Tennessee Technology Development Corporation, B&W Y-12's Uranium Center of Excellence, Honeywell, Eastman Chemical Corporation, and StrataG. Technology 2020 plays a major role in coordinating the GVC for the Partnerships Directorate.

Judges for the finals were Michael Bauer of Foundation Capital; Drew Bond, acting director of Commercialization for DOE's EERE Program; Will Coleman of Mohr Davidow; Kef Kasdin of Battelle Ventures; Karen Kerr of Agile Equities; and Peter Rothstein of Flagship Ventures.

ORNL Director Thom Mason (right) presented the grand prize check to the UT Volantis team for their project based on a super-hydrophobic coating for ship hulls.

Gerald Ludtka with the HMFP device and samples.

BUILDING A TECHNOLOGY-BASED ECONOMY

UT-BATTELLE, EATON SIGN CRADA

UT-Battelle and Eaton Innovation Center have signed a cooperative research and development agreement to investigate the potential applicability of the High Magnetic Field Processing (HMFP) technology for prototype commercial applications by capitalizing on the ORNL Materials Processing Group's unique thermomagnetic facilities and expertise. The agreement involves the investigation of magnetic processing effects on the

C3® Preparing for Operations at S&T Park

As site preparation continues on the Oak Ridge Science and Technology Park at ORNL, one tenant – C3 International, a nanotechnology company based in Alpharetta, Ga. – is already opening a branch office within the park's Nanotechnology Commercialization Center. The NCC is housed in an existing facility at the laboratory.

The C3 office – the center's "anchor tenant" – will occupy some 10,000 square feet of lab and office space. The company, which makes ultrathin coatings that extend the life of various materials, has had a collaborative relationship with ORNL for several years. Arvid Pasto, former director of ORNL's High Temperature Materials Laboratory, is managing C3's Oak Ridge operations and explained why the company chose to locate in the park.

"C3 has worked with ORNL since 2001, when the company was introduced to the HTML User Program. This successful effort was followed by Metals Processing Laboratory User projects and additional work via Work for Others and HTML projects," he said. "C3 has found the relationship with the laboratory to be extremely beneficial. We have been aware of the park since its first public mention and decided right away to move in so that we could access the technology, expertise, and equipment at ORNL."

Pasto mentioned other advantages to being close to ORNL, including the ability to interact with lab staff on a daily basis. "This is especially important for a small business because it can lead to more personal and speedy interactions," he added. "Additionally, C3 can keep up with the progress and results of its user and WFO projects."

The company has negotiated a real estate license with DOE for three offices on the top floor of ORNL Building 2033 and occupies two (for Pasto and his assistant, Billie Russell). Efforts are ongoing to complete work on the facility by early fall. After the remodel, C3 will lease the entire floor, including 20 offices, two conference rooms, and two large laboratory spaces.

Pasto explained that the mission of C3/Oak Ridge is to assist C3 International via three processes:

- Developing and monitoring user and WFO projects at ORNL and other DOE and/or federal labs to characterize the materials that C3 is developing/utilizing.
- Developing concepts for new technological areas and products for C3 to pursue and performing experiments to prove proof of concept.
- Assisting with commercialization activities being performed by the operational divisions of C3 (Aluminum, Steel, and Petrochemical).

Pasto expects the number of C3/Oak Ridge employees to increase to three or four by late 2008 or early 2009. "As funding allows, based on commercialization activities of the C3 divisions, we will hire engineers and technicians to develop concepts for new technologies and products," he said. "Most operating revenue will be directed into research, development, and demonstration, along with patent development, so that C3 can expand into new business applications. Within three years, C3/Oak Ridge could be a several-million-dollar-per-year operation, funding research in its own labs and at ORNL, complemented by the incredible array of technological equipment and staff expertise in Oak Ridge." Pasto also noted the importance of partnering with ORNL staff to develop ideas into commercially feasible concepts, and jointly patenting the concepts or licensing them from ORNL.

Mark Deininger (left), founder, president, and CEO of C3 International, and Arvid Pasto met during the Global Venture Challenge.

EATON CRADA continued

microstructure and physical or mechanical behavior of selected ferrous alloys.

The partners hope to achieve enhanced material performance that will lead to higher power density components, resulting in component weight reduction or higher torque/loading ratings for various applications; materials and fabrication cost savings; reduced material processing energy consumption; and a "greener" (smaller carbon footprint) manufacturing operation.

The use of large magnetic fields in materials processing is just being realized as superconducting magnet technology advances and potential benefits are being demonstrated through research. The effect of a large magnetic field on phase equilibrium and transformation kinetics has been demonstrated by ORNL's researchers, and others have shown that grain boundary chemistry and precipitation kinetics are also affected by large magnetic fields. Utilizing previous funding from the Department of Energy's Energy Efficiency and Renewable Energy (EERE) program, ORNL researchers were the first to demonstrate HMFP as a revolutionary technology for functional and structural materials. In addition, they have shown that HMFP is a significant and novel enabling manufacturing technology that significantly influences materials microstructure, kinetics, and mechanical performance at the nanoscale, opening a new dimension of materials by design. The total estimated value of this agreement is $750,000 over a 12-month period.

This CRADA is funded through the EERE Technology Commercialization and Deployment Fund, which requires that a project impact the mission of EERE to be eligible and that it carry a one-to-one match of private funding dollars for every dollar of EERE money requested. The EERE mission impact must be demonstrated in the project's ability to reduce greenhouse gas emissions, energy intensity (i.e., reduce use of electricity, natural gas, oil, coal, or other primary energy source), or U.S. dependence on foreign sources of petroleum or natural gas and to promote production of clean, renewable energy.

(BUILDING TECH ECONOMY continued on page 6)

SPOTLIGHT ON PARTNERSHIPS

Groups Plan Summer Launch of Innovation Valley Inc.

technology and entrepreneurship

The ORNL Partnerships Directorate has joined with a group of area organizations to flesh out details of the technology component for a "next generation" five-year economic development strategy for the Knoxville-Oak Ridge Innovation Valley.

The new initiative builds on the success of the just-concluded "Jobs Now!" effort launched in 2002 but has two important additions – a major effort in education and workforce development, plus significantly enhanced activities in entrepreneurship and technology development.

While planning for the new effort has been under way for months, it officially launches July 1 in conjunction with a new not-for-profit organization called "Innovation Valley Inc." Thom Mason, president and CEO of UT-Battelle, is chair of the new blue-ribbon, private-sector board. Other officers include Jimmy Haslam, CEO of Pilot Travel Centers, and Kevin Clayton, CEO of Clayton Homes.

IVI will serve as the support organization for the partners participating in the next generation regional economic development campaign. The partners are the Blount County Chamber of Commerce, Knoxville Area Chamber Partnership, Loudon County Economic Development Agency, Oak Ridge Economic Partnership, Roane Alliance, and Tellico Reservoir Development Agency.

The Partnerships Directorate, Technology 2020, and UT have joined with the local economic development groups to help develop the technology plan that leverages the research capabilities of ORNL and UT as well as the emergence of several new R&D-focused parks in the area. They include UT's Cherokee Farm, the Oak Ridge Science and Technology Park at ORNL, and Pellissippi Place in Blount County.

The Knoxville-Oak Ridge Innovation Valley – much like the Silicon Valley or Research Triangle – is a geographic identifier that causes one to think of the area. Positioned at the intersection of three interstate highways, the region is a logistical hub and has easy access to markets across the United States. This "brand" also recognizes the area's intellectual and research-based assets, including ORNL and the other DOE facilities, UT, and TVA, among others. Finally, it recognizes the unique natural resources and beauty of the Tennessee Valley. When combined, these ideas of "brains, beauty, and backdrop" come together in the Innovation Valley's unique brand.

BUILDING A TECHNOLOGY-BASED ECONOMY (continued from page 5)

FOUNDATION CAPITAL, ORNL PARTNER IN CLEAN ENERGY TECHNOLOGY PROGRAM

Foundation Capital of Menlo Park, Calif., has been selected by the Department of Energy to work with ORNL in the Entrepreneur in Residence pilot program, which aims to accelerate deployment and commercialization of advanced clean energy technologies from DOE national laboratories into the global marketplace.

"The Entrepreneur in Residence pilot program provides venture-capital-sponsored entrepreneurs with access into DOE's world-class labs to accelerate adoption of advanced renewable energy and energy-efficient technologies to fundamentally transform how we power this nation," said DOE Assistant Secretary for Energy Efficiency and Renewable Energy Alexander Karsner.

From left, Shawn Carson of Technology 2020's Center for Entrepreneurial Growth, Earl Taylor of Green Way Partners, Michael Bauer of Foundation Capital, and Technology Transfer Director Casey Porto at the CEG Brown Bag lunch.

The EIR program involves placing venture-capital-sponsored and selected entrepreneurs in DOE labs to identify laboratory-developed technologies funded by DOE's Office of Energy Efficiency and Renewable Energy and to develop business cases for their commercialization. Each participating lab hosts one entrepreneur in residence at a given time, with DOE supporting the work by providing up to $100,000 to help defray salary and other expenses. Each participating firm will match DOE funding and may contribute additional funds to support its entrepreneur's work.

Using their vast business expertise, Foundation Capital and other selected firms will be permitted to give proven start-up entrepreneurs the opportunity to work directly with laboratory staff for a hands-on look at various commercially viable technologies. Entrepreneurs will conduct technology assessments, evaluate market opportunities, formulate preliminary business cases, and propose business structures in an effort to bring cutting-edge technologies to market.

Upon selecting a technology for commercialization, entrepreneurs in residence and their venture capital sponsors would negotiate a license to use the laboratory-developed technology. Working with their entrepreneurs, venture capital sponsors will form and finance start-up businesses based on the licensed technologies. The foundation of each start-up's business plan would be the commercialization of licensed clean energy technologies. For more information about the DOE Entrepreneurs in Residence Program, visit *http://www.energy.gov/news/5661.htm*.

Program Entrepreneur on Board at ORNL

Michael Bauer

Michael Bauer, Foundation Capital's designated "entrepreneur in residence" is already on the job at ORNL. He and Foundation executives Adam Grosser and Steve Vassallo participated in the Global Venture Challenge in April.

Bauer has a track record of successful ventures and is vice president of Product Management for BPL Global, a Smart Grid utility applications company. He has an MBA from Stanford and an MS in physics from the Technical University of Munich.

Bauer lives in San Francisco and is "commuting" to be at ORNL full time during the week. He will focus on identifying promising technologies aimed at solving problems in the energy market and investigating the feasibility of starting a new company based on one or more of those technologies. Although his energy experience is in the area of energy delivery infrastructure, he will be looking at all possible technology areas as potential candidates for the new venture. Grosser, who is managing partner of Foundation Capital, calls Bauer "a rare combination of technical acumen, business aptitude, and entrepreneurial spirit," adding that it was impossible not to pick him as the firm's EIR candidate. "We've never seen anyone with his skills in pure physics, networking technology, and deep understanding of the energy business," Grosser said. "Foundation is both lucky and honored to have him on the team."

Bauer will be contacting ORNL researchers and working with the staff of the Technology Transfer Office in his quest for "game-changing" technology solutions.

Michigan Governor Jennifer M. Granholm, ORNL Transportation Program Director Ray Boeman, and Associate Lab Director for Energy and Engineering Sciences Dana Christensen at the North American International Auto Show held earlier this year.

ORNL, SUPERPOWER SIGN SUPERCONDUCTING WIRE AGREEMENT

Signing the agreement are Venkat Selvamanickam (left), SuperPower vice president and chief technology officer, and Thom Mason, ORNL director. Standing are Tom Ballard, ORNL Partnerships director, and Patricia Hoffman, DOE principal deputy assistant secretary for Electricity Delivery and Energy Reliability.

SuperPower™

SuperPower, Inc., a Schenectady, N.Y., superconducting wire manufacturer, has signed a license agreement to use an ORNL-developed technology that can lower the cost of producing superconducting wires for more efficient transmission of electricity.

The agreement is part of a DOE-led effort to research, develop, and ultimately transfer energy technologies from national labs to the global marketplace. Patricia Hoffman, DOE principal deputy assistant secretary for Electricity Delivery and Energy Reliability, said incorporating the high temperature superconducting wires and power equipment into the nation's electric grid will help meet growing demand for energy in an efficient, cost-effective manner.

Superconductors are special materials with no electrical resistance at extremely low temperatures. High temperature superconductors (HTS) lose resistance at warmer (though still very cold) temperatures than conventional superconductors. Cooled by cheap and abundant liquid nitrogen, HTS can be used to make lighter, smaller, more efficient, higher-capacity power devices; relieve congested power line networks; and increase power transmission capacity. Second generation, or 2G, wires made by depositing high temperature superconducting materials onto inexpensive metal templates coated with ceramic buffer layers will make high temperature superconducting wires less expensive to produce.

"This agreement is a great example of ORNL working with industry and delivering the science and technology to help address the nation's energy challenges," said ORNL Director Thom Mason. He also cited the ORNL-SuperPower team's 2007 R&D 100 Award and 2007 Federal Laboratory Consortium Southeast Region Excellence in Technology Transfer Award as indicators of their joint success.

Venkat Selvamanickam, SuperPower vice president and chief technical officer, said his company has worked under a cooperative research and development agreement with ORNL to incorporate the buffer technology into its commercial 2G HTS wire as well as to enhance the performance metrics of its wire.

SuperPower's pilot manufacturing facility has yielded the world's longest 2G wire with world-record performance. Selvamanickam said 10,000 meters of the wire have been fabricated into an HTS power cable that has been installed into the power grid in Albany, N.Y., the first "on-the-grid" device demonstration of the technology.

ORNL To Lead R&D for Auto Initiative

Oak Ridge National Laboratory will lead research and development for a new Michigan-based automotive supplier industry initiative called the U.S. Automotive Partnership for Advancing Research and Technologies, or USAutoPARTs. This federal, state, and industry collaborative will perform precompetitive research targeted at priorities established by the auto supplier industry. Initial research will focus on advanced materials; electronics and hybrid technologies; and fuels, engine, and emission control technologies. The formation of USAutoPARTs followed the unveiling of the Automotive Research Alliance, a consortium involving seven southern universities and ORNL. The complementary efforts link ORNL to major automotive clusters in the Midwest and Southeast.

Signing a memorandum of intent to participate in the alliance were Michigan Governor Jennifer Granholm, Department of Energy Under Secretary Clarence H. Albright Jr., and Neil De Koker, president and CEO of the Original Equipment Suppliers Association.

USAutoPARTs
US Automotive Partnership for Advancing Research & Technologies

Through the initiative, suppliers can utilize the expertise of the national laboratory system – with ORNL serving as lead lab – to aid in research for America's next generation of automotive components and systems and in helping solve manufacturing problems. Suppliers and others may choose to participate in one or more of the current or future research focus areas. Participants must make financial contributions to the research, which can include loaned personnel and in-kind contributions.

USAutoPARTs initially will focus on areas aligned with the Vehicle Technologies Program of DOE's Office of Energy Efficiency and Renewable Energy. Similar support is planned by the Department of Defense and anticipated from other federal agencies as the partnership develops.

ORNL is the leading national laboratory for the Vehicle Technologies Program and is home to facilities like the National Transportation Research Center and High Temperature Materials Laboratory. USAutoPARTs will be located in Shelby Township, Mich., in a large vehicle R&D center that will support up to 175 people.

PARTNERTSHIPS DIRECTORATE PEOPLE (continued from page1)

NEW DIRECTORS continued

Technology Transfer and Economic Development, Partnerships' predecessor, to establish the Center for Entrepreneurial Growth as the advisory organization for start-ups connected to ORNL expertise or intellectual property. CEG has expanded to programs serving UT in Knoxville, Western North Carolina, and eastern and southern Kentucky.

"Tom also has helped increase the availability of early-stage investment capital for start-up companies," Ballard said. "He played a leadership role in the creation of the Innovation Valley Nano Alliance and efforts to promote research relationships between ORNL and larger corporations."

At ORNL, Rogers leads efforts to better link ORNL to the technology needs of start-ups and existing industries. He also has a leadership role in business development opportunities that capitalize on the new Oak Ridge Science and Technology Park.

Thompson's responsibilities in his previous role included coordination among the President's Office of Management and Budget and the Senate and House leadership on the funding of federal departments and agencies.

He received his doctorate from the University of Mississippi, where he also was awarded bachelor's and master's degrees in pharmaceutical sciences. Thompson holds an executive master's degree from the Georgetown University School of Business.

His role with the Mississippi delegation brought him to ORNL a number of times as the lab developed research relationships with Mississippi State University and other Mississippi universities and communities. Thompson's duties at ORNL will include further development of the laboratory's university research partnerships.

ORNL Director Thom Mason said the laboratory is fortunate to be able to recruit such a talented individual as Thompson to Oak Ridge. "Blake helps deepen our bench in ways that will strengthen us in the years to come," Mason said.

STAFFING CHANGES

Speck, Scudder, Rader Join Partnerships Team

New members of the ORNL Partnerships Team include Renae Speck, Gwen Scudder, and Carol Rader, who joined the organization earlier this year.

Renae Speck

Gwen Scudder

Carol Rader

Renae Speck, a new commercialization manager in the Office of Technology Transfer, is responsible for portfolio management and commercialization of intellectual property created by Biological and Environmental Sciences staff. Previous positions included assistant director of Technology Transfer, Johns Hopkins Licensing and Technology Transfer; program manager, Vanderbilt-Meharry Center for AIDS Research; and proposal development coordinator, Office of Sponsored Programs, Western Kentucky University. Speck earned a doctorate in pharmacology and molecular sciences from the Johns Hopkins School of Medicine and a B.S. degree in recombinant genetics and chemistry from Western Kentucky.

Gwen Scudder is the administrative assistant for the Managing IP Attorney. She previously was an administrative assistant in the Legal Directorate. A 30-year company employee, Scudder began her Oak Ridge career in the Nuclear Safety Analysis Section of the Engineering Sciences Division. She is enrolled in paralegal studies at Roane State Community College.

Carol Rader has joined Technology Transfer as an administrative support staff member for the commercialization managers. Before coming to ORNL, Rader had many years of experience in support roles with Disney in both information technology and human resources.

New MBA Interns on Board

The ORNL Technology Commercialization Internship Program for University of Tennessee MBA students, a cooperative program between the Partnerships Directorate and the UT MBA Program, is in its sixth year. Many bright and entrepreneurially minded students have made significant contributions to ORNL's technology licensing program, and

The 2008 MBA Market Analysis Team, shown during a recent work session, includes (left to right) Edward Boyd, David Sims, Mark Reeves, Maxim Shabrov, and Aaron Sauers. Boyd, Shabrov, and Sauers are students in the MBA Program at UT, as are team members Edward Davenport and Shawn Bhimani (not pictured).

Image by Nick Myers, University of Tennessee

Alex DeTrana – one of the first interns hired in 2003 – now provides stewardship for a significant technology portfolio as a commercialization manager in the Office of Technology Transfer.

Five new MBA students joined the directorate as technology commercialization interns earlier this year. **Maxim Shabrov, Aaron Sauers, Edward Davenport, Shawn Bhimani,** and **Edward Boyd** began their MBA studies at UT last August and are scheduled to graduate in December. At ORNL they are focusing on preliminary market assessments of new invention disclosures received from research staff by the Office of Technology Transfer. Commercialization managers use the assessments as part of the process for determining if new inventions have sufficient commercial potential to warrant pursuing intellectual property protection for them.

Reeves, Miller, Wilson, Bowman Have New Responsibilities

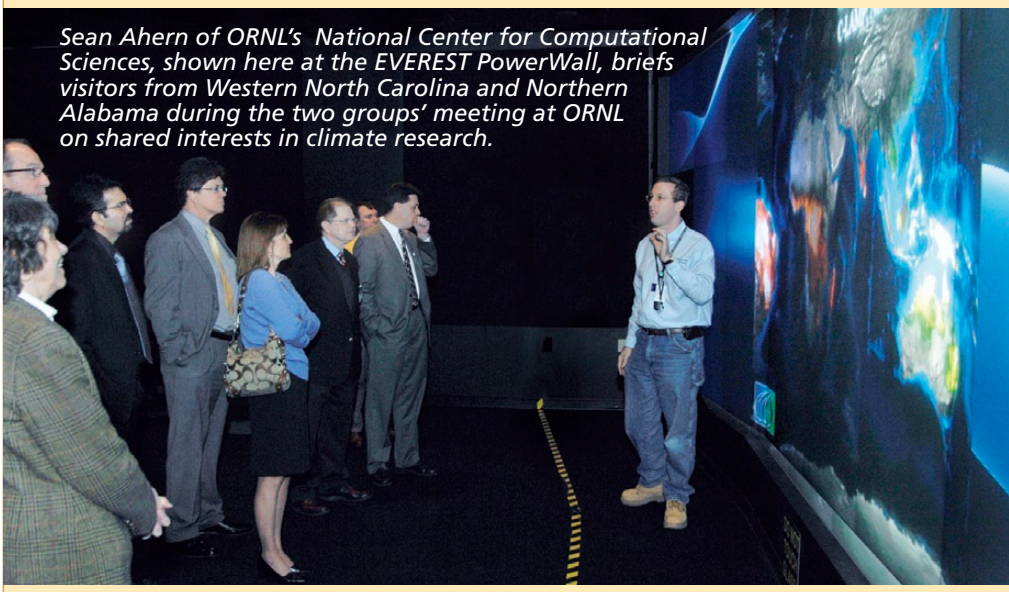
Mark Reeves has assumed the additional responsibilities of associate director of Technology Transfer. He has been with the organization since 2000 and also serves as a senior commercialization manager for Energy and Engineering Sciences. Reeves came to the laboratory as a postdoctoral research associate in the Chemical Technology Division in 1983 and became an ORNL staff member in 1986.

Russ Miller, who joined the organization as a licensing executive in 1991, now manages key elements of the new BioEnergy Science Center mission, including partnerships and intellectual property. He came to ORNL in 1982 as an electro-optics engineer.

Kim Wilson recently obtained her Paralegal Certification and has been promoted to paralegal. She has responsibility for all nondisclosure agreements and material transfer agreements used to facilitate interactions with external parties.

Karen Bowman has been an ORNL employee for some 17 years. In her new position as legal assistant, she is responsible for the day-to-day processes of patent prosecution, which include filing, monitoring, and maintaining patent files. She is a Certified Professional Secretary and is working toward attaining her Paralegal Certification.

Events in Partnership News



Sean Ahern of ORNL's National Center for Computational Sciences, shown here at the EVEREST PowerWall, briefs visitors from Western North Carolina and Northern Alabama during the two groups' meeting at ORNL on shared interests in climate research.

Members of the Tennessee Biotechnology Association discuss bioenergy initiatives during their April meeting at ORNL. TBA met at the lab in conjunction with the Global Venture Challenge.

Saftey Reminder

The American Red Cross provides the following warm-weather safety tips for preventing heat-related illnesses.

- Dress appropriately. Wear lightweight, light-colored clothing, put on a hat, and consider using an umbrella.
- Drink water. Carry it with you and drink continuously even if you do not feel thirsty. Avoid alcohol and caffeine, which dehydrate the body.
- Eat small meals and eat more often. Avoid high-protein foods, which can increase metabolic heat.
- Slow down. Avoid strenuous activity or do it in the cool of the early morning. Stay indoors when possible.
- Take regular breaks in a cool area when engaging in outdoor activity on hot, humid days. Have fun, but don't overdo it!

AWARDS AND REWARDS

Small Businesses Honored at ORNL Awards Program

Seven small businesses – whose services and products range from clean energy to office supplies – were honored by ORNL for their work efforts and support of the lab's mission and operations. Honorees at the Ninth Annual Small Business Subcontractor Awards Program included:

- Small Business – Materials Fabrication and Testing, Oak Ridge. $1.5M sales to ORNL. Primary services: welding, fabrication and waterjet cutting.
- Small Disadvantaged Business – Sentech, Inc., Oak Ridge (headquarters: Bethesda, Md.). $1M sales to ORNL. Primary services: consulting in clean energy and energy efficiency.
- Woman-Owned Business – National Resource Management, Knoxville. $1.9M sales to ORNL. Provides construction project support services.
- HUBZone Small Business – ESG Construction, LLC, Knoxville. $1.2M sales to ORNL. Provides general construction and electrical construction.
- AVID Small Business – Bentco Office Solutions, Chattanooga. $39K sales to ORNL. Provides next-day office supply delivery anywhere in the U.S.
- Service Disabled Veteran-Owned Small Business – XCEL Engineering, Inc., McClellan, Ala. Provides environmental services, emphasizing air quality.
- Veteran-Owned Small Business – Lone Peak Production, Inc., Salt Lake City. $115K sales to ORNL. Provides video production for corporate work.

Awards also were given to ORNL staff members for their support of small businesses. Recipients included Frank DeNap, Tom McLaughlin, Jerome Hicks, Small Business Program Advocates; Dell Morgan, Bill Reich, Ron Crone, Kimberly Anderson, Young Kwon, Jimmy Stone, and John Haines, Mentor-Protégé Champions; April McMillan and Becky Wagner, Historically Black Colleges and Universities Advocates. Organizational awards went to the ORNL Facilities Management Division for support organizations and the Office of the Chief Information Officer for R&D organizations. Willie Besancenez received the advocate award for Contracts.

ORNL Director Thom Mason presents the Woman-Owned Small Business of the Year Award to National Resource Management President Cheryl Sanders. At left are Keith Joy, ORNL Small Business Programs manager, and Beth Schilling, ORNL contract administrator.

ORNL Technology Wins National FLC Award

The High-Performance Lanthanum Manganese Oxide-Enabled, High Temperature Superconducting Tape (LMOe-HTS) developed by ORNL and SuperPower Inc. has received a 2008 national award from the Federal Laboratory Consortium for Technology Transfer.

The tape, a robust, high-current second-generation superconducting wire, was developed through a cooperative research and development agreement between the laboratory and the Schenectady, N.Y., company. The Department of Energy has funded three Superconductivity Partnerships for Industry projects to demonstrate the use of HTS power cables for electric transmission and distribution.

The LMOe-HTS has the unique combination of strength, flexibility, throughput, and low cost needed for power-grid applications, including coils and motors. It can be fabricated at high throughput rates using reel-to-reel processes. The key to its success as well as the key improvement from previous technology is development and use of an epitaxial LaMnO3 (LMO) buffer layer, which can be deposited at high rates homogenously in long lengths.

SuperPower licensed the technology from ORNL for the purpose of incorporating LMO into its superconducting

At the award ceremony were (L to R) Susan Sprake, Los Alamos National Laboratory, FLC vice chair; David Koegel, DOE representative to FLC; award recipient Amit Goyal, ORNL Materials Science and Technology; award recipient Mariappan Parans Paranthaman, ORNL Chemical Sciences; Mark Reeves (behind Paranthaman), ORNL Office of Technology Transfer; award recipient Tolga Aytug, ORNL Chemical Sciences; and Scott Deiter, Naval Surface Warfare Center, FLC chair.

National FLC Award continued

wires, tapes, and cables to improve performance. Sumitomo Electric Industries of Osaka, Japan, in partnership with SuperPower, has used LMOe-HTS wire to construct a 30-meter cable for installation in the national grid in Albany, N.Y. Other demonstration projects are planned for Long Island, N.Y., and Columbus, Ohio. The LMOe-HTS won an R&D 100 Award in 2007.

Doing Business with ORNL (continued from page 2)

OCAST Collaboration Opportunities with Oklahoma

As follow-on to the signing of a Memorandum of Understanding with ORNL to pursue collaborative research opportunities, the Oklahoma Center for the Advancement of Science and Technology (OCAST) hosted Partnerships Director Tom Ballard and Industrial and Economic Development Partnerships Manager Alan Liby on a visit of Oklahoma's premier research facilities. The visit included discussions with OCAST staff and faculty and administrators at Oklahoma State University, University of Tulsa, and University of Oklahoma. Ballard and Liby also visited the new Helmerich Advanced Technology Research Center in Tulsa, a new OSU business incubator, OSU's multispectral laboratories in Ponca City, and the National Weather Center. Discussions of potential collaboration spanned the breadth of advanced materials, cyber security, sensor development and testing, transportation fuels, high-performance computing, and weather and climate topics.

The Oklahoma hosts later became visitors at ORNL. Michael Carolina, OCAST executive director, was accompanied by OSU faculty members Raman Singh and Ranji Vaidyanathan during stops at the Center for Nanophase Materials Sciences, High Temperature Materials Laboratory, Materials Processing Laboratory, Composites Laboratory, and National Transportation Research Center.

These visits served to reinforce several collaborative projects and identify potential opportunities. Ongoing collaborations include the use of ORNL high-performance computing resources by Norman-based Atmospheric Technology Services Company; partnership of the Noble Foundation of Ardmore in the ORNL-led BioEnergy Science Center; and work in superhydrophobic materials and carbon nanotubes to support development of prosthetic devices for Oklahoma City-based Martin Bionics. New opportunities of interest include additional work with carbon nanomaterials and superhydrophobic materials and new work in sensors, climate change, and cyber security.

University Partnership Activities

ORNL, Jackson State Sign Mentor-Protégé Agreement

A joint initiative has been launched by ORNL and Jackson State University to help expand the university's research programs and promote research collaboration at both institutions.

"Matching the talents of an acclaimed university with the resources of a world-class national lab emphasizes the importance of training the next generation of scientists," said William Valdez, director of Workforce Development for DOE's Office of Science.

ORNL Director Thom Mason said the partnership gives the lab opportunities to gain access to new expertise, extend research capabilities, and identify exceptional candidates for positions at ORNL. "We look forward to making our capabilities available to Jackson State faculty and students and to the contributions that they will make to our missions and programs," he said.

Signing the mentor-protégé agreement between ORNL and Jackson State University are (from left) Robert Brown, deputy manager, DOE Oak Ridge Operations; Ronald Mason, president, Jackson State University; and Thom Mason, ORNL director. At right is Will Minter, director of the ORNL Small Business Programs Office.

The agreement will provide ORNL opportunities for joint initiatives in fields where Jackson State's capabilities are nationally known, such as chemistry, environmental science, and human health. "Our students and faculty will benefit from experience with ORNL's state-of-the-art research facilities, modern laboratory equipment, and expert science staff," said Ronald Mason Jr., Jackson State president.

The Mentor-Protégé Program is part of a DOE initiative to encourage and help small businesses perform contracts and subcontracts for ORNL. In addition to minority educational institutions, program participants include small disadvantaged businesses and those owned by women or service-disabled veterans. Jackson State already works with ORNL on emergency operations management and disaster response systems. The university enrolls some 8,000 students and is a partner in ORNL's Southeast Region Research Initiative.

IN THIS ISSUE

Partnerships Directorate People
- Rogers and Thompson New Directors 1
- Staffing Changes 8

Technology Events
- UT Team Wins Venture Challenge 1

Message from the Director 2

Doing Business with ORNL
- Safeguards Laboratory User Facility 2
- ORNL Collaborates with Oklahoma 11

Building a Technology-Based Economy
- UT-Battelle and Eaton Sign CRADA 4
- C3 Preparing to Operate at S&T Park 4
- Partners in Clean Energy Program 6

Spotlight on Partnerships
- Launch of Innovation Valley Inc. 5

Building Economic Development
- ORNL, SuperPower Sign Agreement 7
- ORNL Leads R&D for Auto Initiative 7

Safety Reminder 9

Events in Partnership News 9

Awards and Rewards
- Small Businesses Honored 10
- ORNL Technology Wins National FLC Award 10

University Partnership Activities
- Mentor-Protégé Agreement With JSU 11

PARTNERSHIPS

UPCOMING EVENTS

September 15–16
Tennessee Governor's Conference on Economic Development, Nashville, Tennessee.
For more information:
www.state.tn.us/ecd/index.htm

October 14–16
State Science and Technology Institute (SSTI) 12th Annual Conference, Cleveland, Ohio.
For more information:
www.ssticonference.org/

NEW Delivery Policy!
See Front Page

PRSRT STD
U.S. Postage
PAID
Permit No. 3
Oak Ridge, TN

OAK RIDGE National Laboratory | PARTNERSHIPS

• MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY •

Partnerships Directorate
Oak Ridge National Laboratory
P.O. Box 2008
Oak Ridge, TN 37831-6196

For information, questions, and comments, contact us by one of the following: E-mail: *partnerships@ornl.gov*
Web site: *www.ornl.gov/tted*
Toll-free number: 866-221-2527