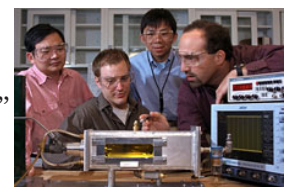
August 2002

Airborne Laser Takes Flight *Page 2*

LBNL breeds future scientists *Page 2*

Argonne develops "X-ray vision" *Page 3*



FLC
NewsLink
Federal Laboratory Consortium for Technology Transfer
The only government-wide forum for technology transfer

T2 Events

World's Best Technology
2002, Sept. 24-26, 2002
Pittsburgh, PA

•

Homeland Security & Natl. & Defense Symposium
Sept. 9-13, 2002
Atlantic City, NJ

•

National Design Engineering Show
March 3-6, 2003
Chicago, IL

•

FLC National Meeting
May 5-9, 2003
Tucson, AZ

Go to:
www.federallabs.org
for a complete Calendar of Events

T2 Training

NTTC Technology Assessment & Marketing
Sept. 23-25, 2002
Berkeley, CA

•

Association of Energy Engineers Training Program
Sept. 30-Oct. 4, 2002
Dallas, TX

T2 Fact

In 1908, BakeLite plastic sparked the transfer of polymers from the lab to the marketplace. Polymers are now used to make everything from jewelry to electric insulation.

NASA Technology Makes Life on Earth Easier

Embedded web technology (EWT), originally developed at **NASA's Glenn Research Center (GRC)** to support space shuttle and International Space Station operations, is emerging in commercial form as a result of the center's focused efforts to transfer this high-potential technology to industry.

EWT, which combines Internet, World Wide Web and real-time systems technologies, enables the low-cost, real-time remote control and monitoring of embedded systems via a standard web browser. Embedded systems contain computers, software, input sensors and output actuators, all of which are dedicated to the control of a specific device.

According to **David York**, chief engineer of flight software engineering at GRC, embedded systems are widely used in consumer and industrial applications. "Embedded systems can be found in cars, video cassette recorders, copy and fax machines, and any number of household, business, and industrial

See EWT, page 4

Premier Event Showcases Technology Transfer

As part of National Manufacturing Week, the National Design Engineering Show (NDES) invites federal laboratories to showcase their technologies and capabilities during its **2003 Technology Transfer Conference and Exposition (TTCE)**.

The event will take place March 3-6, 2003, at the McCormick Place Complex in Chicago, Ill.

TTCE has invited the FLC, research and development (R&D) labs, executives from small and large businesses, members of academia, and venture capitalists to exhibit, learn, and network. The event puts buyers and sellers of intellectual property and technology transfer face to face. FLC member laboratories, as well as other R&D facilities, will be able to present the technologies, capabilities, and services resident in their labs.

Exhibitors at TTCE will benefit from the exposure and heightened awareness that comes from being co-located with other labs, such as NASA, the Army Research Laboratory, and Pacific Northwest National Laboratory. Industry members such as Caterpillar, Dupont, and Seimens will also be walking the floors in search of potential partnering opportunities. Laboratories are encouraged to have inventors attend to make technical presentations. If an individual lab doesn't have the resources available to participate as an exhibitor, the FLC will have a booth to showcase technologies from various member labs. NDES addresses the needs of the $770 billion design engineering market. If you're looking to push your next OEM product development project to another level, then NDES is the place to be. One thousand exhibitors will feature their latest tools used in mechanical and electromechanical design and product development. No other event in North America offers a more comprehensive array of new ideas, technology, products and advanced materials from major companies such as Autodesk, Baldor Electric, IBM and Parker Hannifin. Last year, with more than 1,600 exhibits and 50 conference sessions, NDES proved to be North America's premier manufacturing marketplace.

Technology professionals take in an exhibit at NDES 2002.

See NDES, page 4

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5 Regional Roundup

CHECK OUT NEWSLINK ONLINE
www.federallabs.org

DC Dispatch

U.S. Government Requests Plan for the Use of Technology in Fighting Terrorism

Responding to the ever-changing face of national and global security, the National Research Council (NRC) developed a plan to assist in the strengthening of homeland security.

The 400-page report, *Making the Nation Safer, The Role of Science and Technology in Countering Terrorism*, was produced by NRC members from the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. The presidents of these organizations, Bruce Alberts, William A. Wulf and Kenneth I. Shine, respectively, immediately wrote President George W. Bush after the September 11 attacks, informing him that the new war against

See DC Dispatch, page 5

Lab in the Limelight

USDA Gives Fruits and Vegetables Longer Life

Fresh, tasty produce from the West is even fresher and tastier, thanks to licensed technologies from the **U.S. Department of Agriculture, Agricultural Research Service, Pacific West Area (PWA)**. New processes from PWA's **Western Regional Research Center (WRRC)** treat pre-cut apple slices with a natural substance that retards browning. This gives "restructured" fruit and vegetable snack bars made of 100% fruit or veggie purees a longer shelf life.

Beyond the new commercial products, world-class biotechnology programs with major federal laboratory and university partners take place at WRRC and the **Plant Gene Expression Center (PGEC)** in Albany, Calif., two of eight multifaceted collaborative centers in the PWA. "We expect increasing emphasis on transferring the results of our biotechnology research programs," said **Dr. Antoinette**

Technician Brandy Jones examines vegetation that began as cells grown in a tissue culture.

See Lab in the Limelight, page 4

Fed Labs Flash

Technology Transfer Notes from Within the Federal Laboratory Community

LBNL Brings Back "Wonder"

Lawrence Berkeley National Laboratory (LBNL) offers six interesting new science questions in its second season of "Did You Ever Wonder?" for high school students—or anyone. New subjects address everything from the secrets inside living cells, why the digits of pi look random, how electrons move through exotic crystals, and why people age. Check out the interesting personal profiles, e.g., a math prodigy from Provo, Utah, who loves number theory and really fast computers.

LBNL scientists make future scientists ask "why?"

More info: www.lbl.gov

AFRL and Raytheon Sign CRADA

The **Air Force Research Laboratory's (AFRL) Directed Energy Directorate** signed a joint research agreement with **Raytheon Missile Systems** of Tucson, Ariz. The 24-month collaborative agreement will pool the directorate's expertise in high-energy lasers and Raytheon's experience with missile technologies to find ways that high-power lasers can be used to defeat various weapon systems.

More info: Eva D. Hendren, (505) 846-1911

NASA Nominates Gregory as Deputy Administrator

The White House has officially presented the U.S. Senate with the nomination of **Frederick D. Gregory**, astronaut and Associate Administrator for Space Flight, as the next **NASA** Deputy Administrator. A veteran space shuttle commander and former **U.S. Air Force** combat pilot, Gregory currently leads NASA's human space flight endeavors.

Kudos for INEEL from Idaho Gov.

The **U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory's (INEEL)** Environmental Restoration and Biotechnology Research groups received a distinguished public service commendation from **Idaho Gov. Dirk Kempthorne** for a bioremediation process used to destroy a dangerous pollutant in groundwater supplies. The INEEL-developed technology, which has potential cleanup uses worldwide, uses naturally occurring bacteria in groundwater to break down the organic chemical trichloroethene (TCE) into harmless constituents. TCE is one of the nation's most widespread groundwater pollutants. Untreated, it can remain in groundwater for thousands of years. With this new method, scientists expect that TCE contamination of the Snake River Plain Aquifer at Test Area North will be remediated within 15 years—about twice as fast and an estimated $23 million less than the original method.

More info: John Howze, (208) 526-6864, jhowze@inel.gov

New NIST Publications Available

A well-used **National Institute of Standards and Technology (NIST)** 1963 handbook, *Experimental Statistics*, is now "new and improved" and available on the Internet. For engineers, scientists, businesses, researchers and teachers who use statistical techniques in their work, the *NIST/Sematech e-Handbook of Statistical Methods* is interactive and offers computer graphics and easy search capability for rapid information exploration.

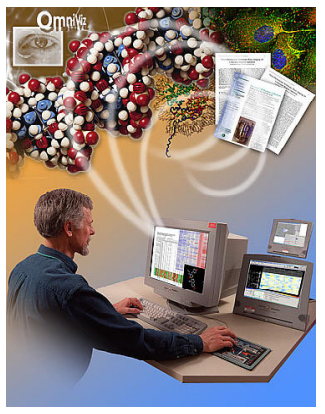
More info: Philip Bulman, (301) 975-5661

PNNL, OmniViz win R&D 100

R&D Magazine has recognized researchers at the **Department of Energy's Pacific Northwest National Laboratory (PNNL)** and **OmniViz Inc.**, headquartered in Maynard, Md., for developing one of the 100 most significant innovations of 2001—a data mining and visualization software tool called OmniViz™. The software can be used to analyze and graphically display large collections of numeric, categorical, genomic sequence and text data primarily for life and chemical science research.

The OmniViz™ visualization tool enables scientists and business professionals to integrate analyses across multiple data types and domains, including large collections of experimental data and associated literature, patents and competitive intelligence information in the same visual framework, in order "to discover, prioritize and test decisions or hypotheses."

OmniViz™ represents a technological advancement in retrieving and analyzing information from large, disparate numerical databases and text collections, with an unprecedented breadth of coverage, speed and output options. The software is able to find and display relationships that were neither specified nor suspected by the user, the transparent mixture and linkage of various types and formats of input data, and an increased computational speed. OmniViz™ provides cross-platform compatibility—running as a workstation based application under Solaris™ or Windows™, with the ability to use a Solaris™, Windows™, or Linux-based processing server.



R&D Magazine's R&D 100 Award honors the most promising new products, processes, materials or software developed throughout the world. PNNL researchers have received 59 R&D 100 Awards since 1969, including 52 since 1988.

More info: 1-888-375-PNNL

Lab Work

Airborne Laser Takes First Flight

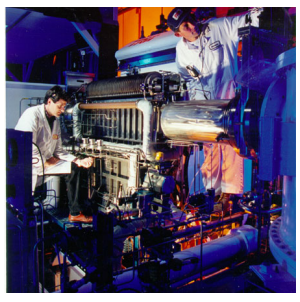
The Airborne Laser (ABL)—an extensively modified Boeing 747-400F destined to be the world's first directed-energy combat aircraft—made its maiden flight over western Kansas on July 18 before landing where it took off, at **McConnell Air Force Base.**

The flight was made to prove that the aircraft still performs like a Boeing 747 despite the structural and operational changes made during its 2 1/2- year stay at the Boeing Maintenance and Modification Center.

The ABL takes flight in Witchita, Kan.

The flight is "… a milestone in the history of ABL," said **Col. Ellen M. Pawlikowski**, director of the Airborne Laser System Program Office at **Kirtland Air Force Base**, N.M. The ABL's task is to destroy just-launched missiles by focusing its high-energy laser beam on the pressurized fuel tank, causing it to rupture and explode—in effect, causing the missile to kill itself.

Begun in 1996, ABL is being developed by the Boeing Co. (supplier of the aircraft and software, the brains of the weapon system), TRW (builders of the megawatt-class lasers that comprise the system's kill mechanism), and Lockheed Martin (builder of the complicated maze of mirrors and lenses used to guide the lasers to the target and the turret that will house the system's 1.5-meter telescope). When testing is complete in 2004, the ABL will be turned over to the Air Force, sprayed Air Force-gray, and numbered 00-0001 on its tail, as the first new military aircraft of the millennium. Within the last decade, ballistic missiles—such as the Scuds used by Iraq during Operation Desert Storm—have emerged as major threats to American forces deployed abroad and allied nations as well. As part of an Air Force effort to address the feasibility of an airborne laser system for defense against those types of missiles, a team composed of the Missile Defense Agency (MDA), the U.S. Air Force, Boeing, TRW and Lockheed Martin is building an accurate, airborne, high-energy laser. The ABL weapon system will operate at altitudes above the clouds where it can acquire and track missiles in boost flight, and then accurately point and fire the laser with such energy that the missile is destroyed before it can do any harm.



TRW technicians prepare the ABL's flight-weighted laser module for the first test of the laser's power and lasing efficiency.

Artist's rendering of the ABL in flight.

NewsLink

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TECH WATCH

FEDERAL LABORATORY TECHNOLOGIES READY FOR TRANSFER

AGRICULTURE

NEW LIFE FOR CATFISH

A new catfish line developed by **USDA Agricultural Research Service (ARS)** scientists promises to provide a shot in the arm—and greater profits—for the U.S. catfish industry, according to producers who rave about its big appetite and superior growth rate. Fish in this new catfish line, NWAC103, consumed 10% more feed and grew 10% faster than channel catfish now in production. The new line was released jointly last year by ARS and the Mississippi Agricultural and Forestry Experiment Station (MAFES) at the Thad Cochran National Warmwater Aquaculture Center (NWAC) in Stoneville. In five southern states, 35 selected producers were chosen by lottery. Thus far, researchers have released nearly 750,000 pounds of two- and three-year-old broodstock to producers. Producers are excited about the new line because the fish are such aggressive feeders and mature so early that the broodstock have doubled in size in one year, plus sales have increased. It is predicted that the new line will be the predominant catfish produced in the Mississippi Delta in the next two to three years. ARS scientists selected the fish for fast growth and increased feed consumption in the Stoneville breeding program. ARS scientists identified genetic markers that allowed for rapid identification and certification to distinguish it from other catfish. It is believed that genetic improvement of channel catfish is essential for long-term viability of the U.S. catfish industry.
More info: www.usda.gov

SENSORS

THICK AND SAUCY

Runny ketchup isn't just bad on a burger; it's bad business for the food manufacturer that may have process control problems adversely affecting product quality and manufacturing costs. To ensure that puddings, sauces and other fluid products have the viscosity, texture and other characteristics consumers expect, most manufacturers must conduct time-consuming manual batch sampling. Problems may not be discovered until a defective product already has been processed.

Researchers at **Pacific Northwest National Laboratory (PNNL)** have developed an ultrasonic tool that provides noninvasive, real-time and continuous monitoring of the key physical properties of fluid products. The Real-Time Ultrasonic Rheometer and Fluid Characterization Device is compact, easily mounted on process piping, and also could be used to monitor the performance properties of polymers, coatings, chemicals and pharmaceuticals. The device could also be useful in consumer product manufacturing, chemical or pharmaceutical production, or any process where the measurement of liquid or slurry rheological properties is important.

Based on an earlier PNNL ultrasonic measurement technology, the Ultrasonic Rheometer represents a combination of advances in signal processing, sensors, and miniaturized electronics.

PNNL recently demonstrated the technology at a tomato processing plant and is interested in working with industry on other applications.
More info: Dr. Walter C. Weimer, (509) 375-6922, walter.weimer@pnl.gov

TRANSPORTATION

'SUPERMAN' SEE-THROUGH

By using high-brilliance X-rays from **Argonne National Laboratory's (ANL)** advanced photon source, researchers are able to obtain never-before-possible, time-resolved and quantitative information on the structure of gasoline and diesel fuel sprays at the moment they enter the engine cylinder. Before the new "X-ray vision" technique, the portion of fuel sprays nearest the injector nozzle had been too opaque for visible light to penetrate, and engine designers and manufacturers had to guess at conditions inside the fuel spray. Now, ANL has paved the way to see directly inside an engine to study the complete range of fluid dynamics and the chemistry of fuel sprays and fuel spray processes.

ANL's novel radiographic diagnostic technique uses time-resolved synchrotron x-rays to study the dynamic characteristics of fuel sprays. X-rays are highly penetrative in materials with low atomic numbers so, using highly time-resolved monochromatic x-rays, ANL has developed a nonintrusive absorption technique that yields a highly quantitative characterization of the dynamic mass distribution in the spray from both diesel and gasoline engine injectors.

ANL recently commissioned a new optical spray visualization lab with specialized instruments for measuring instantaneous injection rate and total mass flow rate from injectors. This equipment will provide support and independent confirmation for its x-ray-based spray research.

More info: www.transportation.anl.gov/ttrdc/tech-briefs/2001-Discover.html

BIOTECHNOLOGY

BENDS MEND

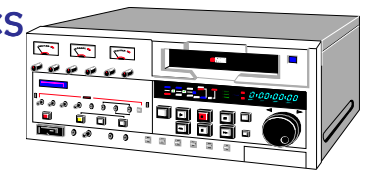
Hypoxia, a loss of oxygen to the brain, occurs rapidly at high altitude (25,000 feet) and affects every person differently. Currently, the only way to determine how an individual will react under hypoxic conditions is to undergo the actual experience during controlled exposure training in an altitude chamber.

Although altitude chamber training saves lives, there are sometimes associated remote health risks such as decompression sickness (similar to a diver with the bends) or pressure trauma (ruptured eardrums, headache and sinus problems, or toothaches). Cost and logistics must also be considered when scheduling and carrying out the training.

Researchers at the **Naval Aerospace Medical Research Laboratory (NAMRL)** are working on a hypoxia-training device that is safe, cost-effective and deployable. With the reduced oxygen-breathing (ROB) device, researchers can duplicate the hypoxia experience in a normal room at ground level. Using a standard aviation mask, a gas reservoir system and a unique software program that adds nitrogen to room air, researchers can duplicate an ascent to 25,000 feet. There is no outside pressure change, so there is no risk of decompression sickness or barotraumas.

Preliminary results indicate that the hypoxia experience on the ROB device and in the chamber are essentially the same.
More info: Doris Ryan, **(202) 762-0472**, **http://bumed.med.navy.mil**

ELECTRONICS



CHIPS, DIPS & TRIPS

Scientists from the **Office of Naval Research (ONR)** and the **Defense Advanced Research Projects Agency** have taken a 40-year-old stagnant technology field and come up with a very high-efficiency thermocouple device that could someday make both freon-dependent refrigerators, as well as power generators, obsolete.

By passing a current through thousands of super-thin layers of two different semiconducting materials, scientists at the **Research Triangle Institute (RTI)** in North Carolina can make something hotter or colder over 20,000 times faster than anything we have today. In addition to the astonishing cooling applications of such a device, these thermoelectric materials could someday be used to convert heat into electrical energy in a far more efficient manner than now possible.

In the 1990s, ONR set out to discover and understand the science that would lead to new thermoelectric materials with potentially high efficiency. RTI's idea was to separate electrical transport from thermal transport through an artificially engineered material based on a semiconductor superlattice, marking a new era in thermoelectrics. ONR is also supporting solid-state synthesis approaches to produce bulk thermoelectric materials.
More info: Gail Cleere, (703) 696-4987, cleereg@onr.navy.mil

LAW ENFORCEMENT

ANTI-ANTHRAX

Some deadly things don't deserve 15 minutes of FAME, let alone hours. A prototype hand-held detector under development at **Sandia National Laboratories (SNL)** can identify the fatty acid methyl esters (FAME) of anthrax in less than 5 minutes.

The rapid identification of the bacillus in minutes, rather than the hours currently necessary, is a crucial step in alerting a building's occupants to flee the deadly bacteria, as well as activating defenses such as anti-anthrax foam dispersal systems. The detector, for which a patent has been applied and in which commercial interest has been expressed, would also help security people making their rounds locate point sources of the disease.

The technique works by preconcentrating airborne particles on a tiny hot plate that acts like a skillet on a stove. The hot plate immediately vaporizes the fatty acids in anthrax's cell walls to create the FAME that form a unique fingerprint of the bacteria. A small computer program correlates the amount of mass of each ester emitted in the analyzed gases at particular times with already categorized elution peaks indicative of anthrax or other diseases. It's far faster and requires less power than current standard techniques.
More info: **Curtis Mowry**, **(505) 844-6271, cdmowry@sandia.gov; www.sandia.gov**

TECH WATCH CONTINUED
MATERIAL

NANO 'POINTS OF LIGHT'

A new generation of solar cells that combines nanotechnology with plastic electronics has been launched with the development of a semiconductor-polymer photovoltaic device by researchers with the **DOE's Lawrence Berkeley National Laboratory (LBNL)** and the **University of California at Berkeley (UCB)**. Such hybrid solar cells will be cheaper and easier to make than their semiconductor counterparts, and could be made in the same nearly infinite variety of shapes as pure polymers.

The LBNL/UCB research team demonstrated that semiconductor nanorods can be used to fabricate readily processed and energy-efficient solar cells together with polymers. The use of solar, or photovoltaic, cells—devices that can absorb and convert light into electrical power—has been limited because of high production costs. Even fabrication of the simplest semiconductor cell is a complex process that must take place under exactly controlled conditions, such as high vacuum and temperatures between 400 and 1,400 degrees Celsius.

Plastic solar cells can be made cheaply in bulk quantities, but until now they have not converted light into electricity efficiently. The hybrid materials of inorganic semiconductors and organic polymers offer the best of both worlds—well-established electronic properties. Polymers offer the advantage of solution processing at room temperature, which is cheaper and allows for using fully flexible substrates such as plastics. These conjugated polymers also offer the highest hole mobility found so far. Higher hole (and electron) mobility means that charges are transported more quickly, which reduces current losses.

Although less efficient than the best semiconductor solar cells in converting sunlight into electricity, the Berkeley hybrid cells offer ample opportunity for improvement, because of their simple structure. The LBNL researchers have already been approached by companies interested in commercializing this technology. The Molecular Foundry, a center for nanoscience, is now being established at LBNL.

More info: **Lynn Yarris**, **(510) 486-5375, lcyarris@lbl.gov; http://www.lbl.gov**

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NDES FROM PAGE 1

Technology users filling the expanse of Chicago's McCormick Place, one of the largest exhibit venues in the world, will have the opportunity to attend conference sessions and meet representatives from some of the largest design and manufacturing companies *in the world*. In past years, Sun Microsystems, Oracle, Microsoft, KPMG, NASA, Ingersoll-Rand, and Intel were among the exhibitors. Last year's coverage included topics such as Design and Engineering, Plant Engineering MRO and Management, Enterprise IT, Industrial Automation and in 2003, Technology Transfer.

More info: FLC Management Support Office at flcmpr@utrsmail.com

LAB IN THE LIMELIGHT FROM PAGE 1

Betschart, Director of PWA's 26 centers in the the eight-state region.

One of the winners of the **2002 FLC Laboratory Director of the Year**, Dr. Betschart said that each project in food safety and quality, pest resistance, and agronomic issues in cereals and other crops is customized according to the best technology transfer method—publication of the technology or in the form of CRADAs, patents and licensing. Another important program component, the director insists, is training researchers in the T^2 process for their full commitment in making the projects work.

A new T^2 scientific paradigm seems to be emerging. The great challenge ahead, Dr. Betschart said, is working in areas of cutting-edge research with federal and/or private sector multiple partners—in genomics, gene discovery, proteomics, and natural resources research, such as agro-ecosystem modeling. These areas are "data-driven and must involve large research networks if they are to move forward rapidly," and technology transfer projects must be tailored to the needs of this "new scientific paradigm."

Recognizing the important role of technology transfer and its integration into lab R&D, Betschart launched the PWA Office of Technology Transfer in 1994. In almost eight years, the PWA has participated in over 100 CRADAs. As a result, new products are on the market, and CRADA activity is now routine for every PWA research unit.

"The bottom line for all Federal research programs is impact," and these scientific programs must benefit society, Dr. Betschart said. And they do at PWA, especially in their emphasis on working with small and minority businesses. As an example, Betschart recently attended the groundbreaking ceremony for a pear processing plant in Oregon that will manufacture the licensed fruit snack bars—and bring 90 new jobs to this economically depressed community. On many levels, PWA's T2 efforts are bearing fruit.

Kenneth Young examines leaf litter for blacklegged tick nymphs.

TECHNOLOGY LOCATOR NEWS

In late July, Technology Locator Sam Samuelian traveled throughout the west as part of his ongoing effort to link potential users from industry, small business, local government, and universities with federal technologies.

The trip took Sam to the **National Renewable Energy Laboratory (NREL)** in Golden, Colo., **Sandia National Laboratories (SNL)** in Albuquerque, N.M., the **Air Force Research Laboratory (AFRL) Directed Energy Directorate** at Kirtland Air Force Base, N.M., and the **National Exposure Research Laboratory (NERL)** in Las Vegas, Nev.

Sam researched NREL's Alternative Fuel User and Solar Energy Research facilities, as well as SNL's capabilities in microsystems/microelectronics, robotics, and photovoltaics.

He also spoke with AFRL's T^2 Support Group Director **Pat Rodriguez** and NERL's **Eric Koglin** about the evolution of the technology locator service.

Upcoming issues of *NewsLink* will explore the role of the locator in T^2 and how potential technology users can put the service to work.

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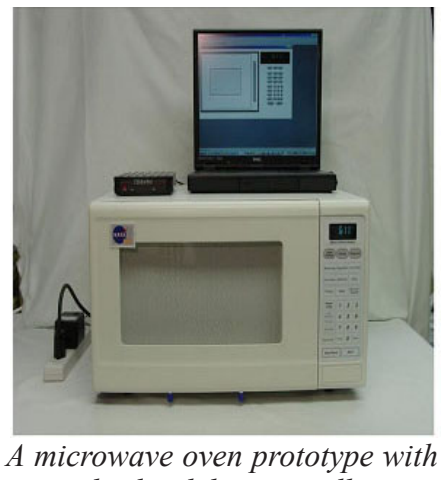
EWT FROM PAGE 1

objects. And anything that has an embedded system has the potential to include embedded web technology."

GRC's EWT team first gained national recognition in 1997 with the introduction of Tempest, the first Web server of its kind for real-time embedded systems and the keystone for EWT applications. From 1997 to 1999, recognizing Tempest's broad potential, GRC hosted a series of workshops for companies interested in commercializing the server and associated technology. For their pioneering work and technology transfer activities, the EWT team earned the NASA Software of the Year Award (1998), the R&D 100 Award (1999), and the **FLC Award for Excellence in Technology Transfer** (2000). EWT is now widely known in the software industry, and more than 20 commercial vendors are offering Tempest-like embedded web servers.

Since the development of Tempest, York and his team have focused on applications of EWT technology for NASA mission programs and commercial use. For example, the team has demonstrated the use of EWT for highly secure command and control via satellite communications, and has continued working with companies following the workshop series. Potential and emerging EWT applications span health care, factory automation, and many other fields of use.



A microwave oven prototype with a standard web browser allows remote cooking control from anywhere in the world.

Most recently, GRC's EWT has entered the consumer market as an integral part of a prototype home kitchen appliance developed by Tonight's Menu of Brecksville, Ohio. The company, which first learned of EWT in a 1997 GRC workshop, used EWT in its Intelligent Ovens® product. Tonight's Menu debuted the product at the Consumer Electronics Show in Las Vegas, Nev., last January, acknowledging the use of NASA technology and generating substantial media attention. The web-enabled combination refrigerator/microwave oven can be controlled from outside the home through a web-ready cell phone or computer. This convenient remote control capability allows the user to direct the appliance to begin cooking the meal, providing a hot, home-cooked meal that can be ready when the user walks in the door.

York and the EWT team are eager to fulfill the technology's widespread potential by seeking new opportunities for collaboration with U.S. industry. "We are open to exploring opportunities with those who are interested in advancing this technology," said York.

More info: Gynelle C. Steele, Glenn Research Center, (216) 433-8258

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Inside the FLC

FLC File

T² Challenge

Apply now! The World's Best Technologies '02 (WBT02) presents an opportunity to show off your newest, most promising technologies—and network with leading seed investors, venture capitalists, and corporate licensing partners!

Hosted by the FLC and the **National Association of Seed and Venture Funds (NASVF)**, WBT02 will be held Sept. 24 at the Sheraton Station, Pittsburgh, Penn., to showcase the most innovative technologies developed in the U.S. Up to 50 technologies with high-growth commercial potential will be selected by a panel of experts and exhibited by the nation's top universities, federal RDT&E facilities, federally supported research and development institutions and businesses that have participated through federally funded efforts, such as the Small Business Innovative Research Program and DOE Industries of the Future.

With help from NASVF, a national organization of public and private investors, the WBT02 is designed to support the movement of leading technologies from laboratories into the marketplace. There will be competition among the top 15 technologies for the 3 most promising technologies and one "Best of Show" award. Seed investors and entrepreneurs will be gathering information on these technologies, many of which have global commercialization potential.

More info: Paul Huleatt, (602) 795-8825, phuleatt@edgecapital.com; www.wbt02.com

T² Op! Exhibit at NDES 2003

Technology transfer will star at the National Design Engineering Show, March 3-6, 2003, in Chicago. The FLC and a number of R&D laboratories, including five **NASA** centers, will rent a large space at McCormick Place to exhibit together at a 20% discount. FLC members and other R&D labs are encouraged to participate as well.

As part of National Manufacturing Week, NDES will have a subset show, the **Technology Transfer Conference and Exposition**. Booth space must be reserved by Aug. 30th, 2002.

More info: FLC Management Support Office, Sam Samuelian, (856) 667-7727, flcmpr@utrsmail.com

Regional Roundup

Northeast

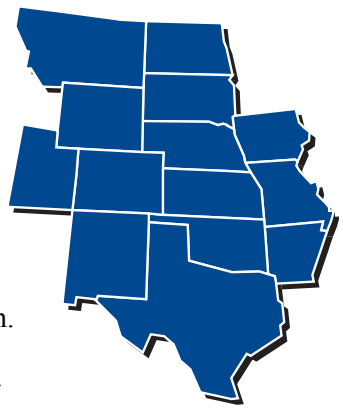
The NE Regional Meeting — "Technology Transfer Concepts and Approaches in 'The City by the Sea'" –is scheduled for Sept. 24-26 at the Hyatt Regency Newport, Newport, RI.

More info: www.federallabs.org; NE Region - Julie Chambliss, (856) 667-7727, jchambliss@utrsmail.com

Mid-Continent

The MC and **NASA Mid-Continent Technology Transfer Center** join the Far West Region Sept. 17-19 in Jackson Hole, Wyo., for their "Regional Roundup in the Rockies." Marketing will be explored—new tools, using intermediaries, and other resources to help you do your job better. The regions will also take a special look at homeland defense technologies with technology needs from the **Federal Emergency Management Agency, NASA,** and the **National Institute of Justice**. Regional laboratories and technologies will also be highlighted.

More info: Ann Kerksieck, (501) 324-9047, http://asbdc.ualr.edu/flc



The Science and Technology Conference, which will be held at Fort Leonard Wood, Rolla, Mo., August 7-8, will promote homeland security and force protection. The office of conference sponsor **Senator Jean Carnahan** (D-MO), has requested that the FLC participate. The conference features doing business with the government, capital access, workforce development, partnering (business-to-business and public-private), T², and intellectual property. Laboratory representatives will discuss working with labs, resources, and hot technologies available from **LANL**, **Sandia National Laboratories, DOE Kansas City Plant, NASA Johnson Space Center** and NASA-wide.

More info: Neal Orringer, (202) 224-8824

Far West

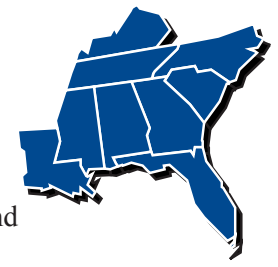
The FW has created a promotional CD business card with information on technology transfer mechanisms and opportunities from federal labs in the region. Already well received, the CD highlights technologies, patents available for licensing and commercialization, and the unique regional facilities that can be used. Also featured are **Regional Coordinator Kurt Buehler** and **Deputy Regional Coordinator Mike Sullivan**, laboratory award winners, a FW laboratory locator, and FLC information. For a copy of the CD card: (360) 681-6144, flcfw@dbamlg.com.

The FW concluded a "targeted usage" study of its web site and the major Internet search engines. In 2 weeks, there were nearly 2,000 targeted technology requests ranging from Fortune 500 to small companies; major universities to K-12; federal, state and local government entities; and international users, via varied major search engines. From the queries, referrals of 30-plus FW labs were made.

More info: Kurt Buehler, (805) 982-4886, buehlerkd@nfesc.navy.mil

Southeast

At his retirement ceremony in May at **Eglin Air Force Base**, longtime loyal FLC member and former SE Regional Coordinator **Jerry Jones** was named the first recipient of the Jerry Jones Lifetime Achievement Award. Jones' future plans include a lot of golf, travel, play with the grandkids, plus economic development activities with the **Gulf Coast Alliance for Technology Transfer, Okaloosa-Walton Community College**, and work with the **FLC Alumni.**



The SE fall conference will be held Oct. 28-30 in Destin, Fla., at the Hilton Sandestin Beach Golf Resort and Spa.

More info: Cris Johnsrud, (352) 294-7817; www.federallabs.org

DC Dispatch *from page 1*

terrorism would "demand a focus on the complex interplay between technological, sociological, and political issues." In doing so, they offered their services as part of the NRC.

The NRC, developed in 1916 to bring together the science and technology communities to advise the federal government, believes the nation must pool its resources and intellectual property to guard against terrorism in the United States and abroad.

According to the NRC, the report "represents only the first step in what must become a long and continuing global effort to spread peace and prosperity to every nation."

To combat terrorism, the NRC began in December 2001 to help the government develop a plan to enlist and combine the work of technology and science within 6 months. The three initial objectives were to create a framework for the application of science and technology for countering terrorism, to prepare research agendas for the areas of primary concern, and to examine crosscutting issues. The framework would characterize the range of threats to the nation's security. These issues include targets, weapons, delivery systems, and possible points of intervention.

Research agendas address areas of vulnerability related to biological sciences, chemical sciences, nuclear and radiological sciences, information technology, telecommunications, transportation, energy facilities, infrastructure, and engineering. The NRC recommended a crosscutting strategy to create interdependence among these areas but also stresses the importance of guarding against the dangers that may arise from that interdependence.

President George W. Bush listens to Hermann Grunder, Director of Argonne National Laboratory, during a tour of the research facilities with Homeland Security Director Tom Ridge on July 22.

Making the Nation Safer stresses the need to put technology transfer on the frontlines in the war against terrorism. In the coming months, *NewsLink* will investigate what technology transfer professionals should know about their expanding role in homeland security. Topics will include the approach of the NRC's Committee on Science and Technology for Countering Terrorism, relevant technology applications, and partnerships.

ETC...

FLC ANNOUNCES SIX NEW OFFICERS

Finance Officer: **Nancy Moore, Pacific Northwest National Laboratory, Richland, Wash.**, will use her experience in "combining detailed technical and financial analyses of technologies, and emphasizing market needs and financial impacts to technology developers," to assist the FLC. At PNNL since 1977, the Senior Program Manager has focused primarily on the financial impact of industrial energy efficiency. Currently a project manager for the commercialization of an ozone generator developed by the Kharkov (Ukraine) Institute, she has worked with a U.S. company to test, refine the technology, and market it in non-former Soviet Union countries. Moore has worked on several successful energy savings programs associated with the DOE's Office of Industrial Technology.
More info: (509) 376-3638, nancy.moore@pnl.gov

Recording Secretary: Geoff Phillips, Sr., Defense Microelectronics Activity (DMA), seeks to maintain and enhance the FLC's reputation, confidence, and credibility with consistent and accurate maintenance and updating of the FLC official records. Acting Recording Secretary since November 2001, Phillips will make the established updating/recording method a standard and reliable process.


Geoff Phillips

Beginning at Wright Patterson Air Force Base and subsequently at the Sacramento Air Logistic Center, the Air Force Plant Representative Office at Aerojet and McClellan Air Force Base, Phillips has been instrumental in establishing much of the current Air Force technology transfer policy. Currently, as Government Executive at DMA's Federal Technology Center in North Highlands, CA, he has worked on major tech transfer programs with federal agencies and academia.
More info: (913) 651-1436, rgphilli@ix.netcom.com

Members-at-Large (MAL)
Debra Covey, Ames Laboratory, Ames, Iowa, eager to serve after a long absence, brings a "fresh viewpoint and objectiveness" to meet the FLC's needs, goals, and missions. Involved in tech transfer at Ames for 10 years, she has managed the Office of Intellectual Property and negotiated research agreements. Manager of the Office of Industrial Outreach and Technology Administration since September 2001, Covey is responsible for tech transfer, intellectual property, institutional planning, export control, the omsbud program, as well as miscellaneous duties.
More info: (515) 294-1048, covey@ameslab.gov

Lee Greenberg, U.S. Army, Benet Laboratories, offers FLC committee experience, especially his work on the Legal Issues Committee. As MAL, he says his challenge is to educate the membership on how the general and specific provisions of intellectual property, fiscal, and environmental and tort law relate to proposed business goals and objectives. It's a "continual challenge in tech transfer to develop business relationships and mechanisms that accommodate the business goals and objectives and evaluate the associated risks and rewards." Currently the Associate Director of Benet Laboratories in Watervliet, N.Y., Greenberg is responsible for tech transfer, planning, programming, budgeting, and information technology.
More info: (518) 266-4325, lgreen@pica.army.mil

Pat Rodriguez, Air Force Phillips Laboratory, Kirtland AFB, N.M., plans to work hard to ensure that ORTAs have the tools they need for meeting and/or exceeding their tech transfer objectives—following the FLC's primary mission to be responsive to its member laboratories and representatives. Now the Technology Transfer Support Group Director for the Air Force Phillips and **Air Force Research** Laboratories, Rodriguez has worked extensively for the Air Force on technology transfer policy, and has held responsible positions in science, technology, and energy resources in New Mexico and oil research in Alaska.
More info: (505) 846-0857, patrick.rodriguez@kirtland.af.mil


Patrick Rodriguez

Michael E. Sullivan, Ph.D, is the Head of Technology Development and the ORTA at the **Naval Air Warfare Center Division-Weapons Division (NAWCWD)** in Point Mugu, Calif. Dedicated to the FLC, the new MAL vows to follow-through and support the FLC T^2 congressional mandates; support and fund programs that benefit all six regions; provide services and training to help ORTAs and FLC participants perform their jobs better; increase the accountability of FLC officers; and perform better services to sponsoring agencies. The current Far West Deputy Regional Coordinator has also served as FW Regional Coordinator, a member of the Executive Committee and the Executive Board, and on the Planning and Policy, Finance, Program, and Legal Issues Committees.
More info: sullivanme@navair.navy.mil, (805) 989-9208


Michael E. Sullivan

A heartfelt thanks to our outgoing officers for their great service. Goodbye to ***Lew Meixler, Finance Officer; Sharon Borland, Alan Updike****, and* ***Preston Carraway, Members at Large****. Thanks also to our former MAL and loyal FLC member,* ***Art Stephens****, regrettably no longer in tech transfer.*

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