



# FLC NEWSLINK

August  
2003

Federal Laboratory Consortium for Technology Transfer  
The Only Government-wide Forum for Technology Transfer

## T<sup>2</sup> Events

FLC Northeast/Midwest  
Joint Reg. Meeting  
New York, N.Y.  
Oct. 1-3, 2003

•  
Society of Petroleum  
Engineers Conference  
Denver, Colo.  
Oct. 5-8, 2003

•  
International Biotech &  
Infotech Summit East  
Washington, D.C.  
Oct. 20-21, 2003

•  
NASA Tech Briefs  
Nanotech 2003  
Boston, Mass.  
Oct. 23-24, 2003

•  
2003  
NASVF Conference  
Baltimore, Md.  
Nov. 2-5, 2003

•  
CMMI  
Technology Conference  
Denver, Colo.  
Nov. 17-20, 2003

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## T<sup>2</sup> Fact

Inventor Lewis Howard Latimer invented and patented an incandescent light bulb with a carbon filament in 1881. Recognizing that Thomas Edison's bamboo filament was impractical (lasting only 30 hours), Latimer invented the carbon filament, thus making the light bulb practical. He served as an engineer for the Edison Company for many years and supervised the installation of the electric light system in New York, Philadelphia, Montreal, and London.

- Byron Crudup

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## Tech Location, Key to Advancing Law Enforcement

The needs for public safety technology continue to be a priority issue with federal, state and local governments.

Following 9/11, the FLC was commended by the National Institute of Justice (NIJ) for "significant contributions provided in support of its efforts at the World Trade Center."

Additional requests for anti-sniper technology brought a flood of ideas from FLC members.

**Jerry Bortman**, an FLC alumnus and consultant to the Office of Law Enforcement and Corrections Technology Commercialization (OLETC), indicated that the FLC Technology Locator service played a significant role locating



A mock prison riot staged by OLETC provides corrections officers the opportunity to train on and master new technology.

laboratory resources. To continue the working relationship between federal labs and the law enforcement and corrections community, a Memorandum of Understanding (MOU) between the FLC

and the National Institute of Justice was signed March 21, 2003.

Some of the priority needs cited in the MOU include nonintrusive concealed weapons and contraband detection, vehicle stopping, DNA testing and DNA lab improvement, first responder/officer protection, less-than-lethal incapacitation, information management, critical incident technology, crime mapping, location and tracking, secure communications, and noninvasive drug detection.

Another recent area of concern involves school safety technology, with *See Law Enforcement, page 4*

## Award-Winning Techs Garner Licenses Collaboration of Sandia, Livermore, and Berkeley Leads to Marketplace

*R&D Magazine* has announced the winners of the 41st annual R&D 100 Awards, honoring the 100 most technologically significant new products of the year.

Two of the 2003 awards, which have been called the "Oscars of Invention," have gone to technologies developed by scientists at **Lawrence Berkeley National Laboratory** (LBNL) and their collaborators. The awards were presented for the EnergyPlus Building Simulation Program and techniques for extreme ultraviolet lithography. The new awards bring to 32 the number of R&D awards won by LBNL researchers.

The EnergyPlus Building Simulation Program is a new computer program that models expected energy use in commercial and residential buildings. Energy use in buildings accounts for one-third of the nation's total energy use and

two-thirds of its electricity use. Thus, even small gains in efficiency translate into enormous savings.

A predecessor of EnergyPlus, named DOE-2, has already saved an estimated \$20 billion in energy costs since 1980.

Over the next decade, EnergyPlus is expected to exceed those savings.

Architects, engineers, and researchers use EnergyPlus to model complex heating, cooling, and lighting systems for innovative buildings that are more energy-efficient, more comfortable, and have lower energy cost. EnergyPlus also calculates indirect environmental effects, like atmospheric pollutants, associated with a building's



Computer rendering of the new federal building to be built in San Francisco. The building was designed with the aid of the EnergyPlus software distributed and partly developed by LBNL.

energy use. More than 12,000 users have downloaded the free software since it was released. In addition, over 50 licenses to collaborative developers *See Award-winning Techs, page 4*

## DOD Pilot programs for R&D Labs & Centers Probed

by Neil MacDonald  
*Federal Technology Watch*

Pilot programs designed to help Department of Defense (DOD) laboratories and test centers explore innovative partnership and human capital strategies have not been effective because the DOD has lacked an effective implementation process, says a General Accounting Office report released last week.

Concern that declining budgets and an aging workforce were contributing to serious shortfalls in the infrastructure and capabilities of DOD laboratories and test centers spurred Congress to authorize the pilot programs in FY99 and FY00.

In FY03, Congress extended these activities until 2005 and enacted a new pilot program that runs until 2006.

*See Pilot Programs, page 5*

## Lab in the Limelight Edgewood takes Lead in Chem, Bio Defense

by Tim Lavery  
and Pam Junot

The **U.S. Army Edgewood Chemical Biological Center** (ECBC) is the Department of Defense (DOD) lead laboratory for the non-medical chemical and biological (CB) defense program.

Located at the Edgewood Area of Aberdeen Proving Ground in Maryland, ECBC has been protecting U.S. interests since 1917, when the military began work to counter chemical weapons used during World War I.

Since then, the center's mission has evolved to include all aspects of research, development and engineering in the field of CB defense.



Aided by the latest in engineering controls and protective equipment, ECBC scientists provide effective and efficient chemical and biological defense solutions. Operations in labs like this Biological Safety Level 3 facility support military, civilian and industry projects.

Products for all U.S. warfighters are the top priority for ECBC. With its unique ability to work with actual chemical warfare agents, ECBC is well known for its groundbreaking work in protection, detection and decontamination technologies. The *See Lab in Limelight, page 4*

## Fed Labs Flash

Technology Transfer Notes from Within the Federal Laboratory Community

### Academic Partnerships Advance POSS Payoff

Professor **Stanley Edward Anderson**, a member of Westmont College's Department of Chemistry since 1978, has been selected for a National Research Council Senior Research Associateship award. The associateship is an internationally competitive award sponsored and specifically funded by the Air Force Office of Scientific Research and the **Air Force Research Laboratory's Propulsion Directorate** at Edwards AFB. It will allow him to conduct studies of small amounts



Stanley E. Anderson

of polyhedral oligomeric silsesquioxane (POSS) monomers during his sabbatical at the University of California Santa Barbara Chemistry Department with Dr. Michael T. Bowers.

Analyzing the molecular structures of these special high-performance polymers using ion chromatography/mass spectrometry techniques perfected by Bowers Group should show, for the first time, the complex shapes of this family of polymers on a molecular level. It will provide greater understanding of their material attributes and the evidence that POSS is a complex nanostructure rather than a simple sphere.

Dr. Anderson's study of the nano-scale structure of POSS will help explain the unusual reinforcement or strength that these molecules demonstrate.

### NIST May Grant Sequencing License to LI-COR

The **National Institutes of Health's** Office of Technology Transfer in Rockville, Md., is contemplating the grant of an exclusive, royalty-bearing license to LI-COR Inc. (Lincoln, Neb.) for high-speed parallel molecular nucleic acid sequencing. This invention, also known as two dye sequencing, is based on fluorescence resonance energy transfer technology and is described in U.S. Patent applications 60/151, 580 & 10/070, 053.

The field of use may be limited to instrumentation systems and reagents for performing single molecule nucleic acid analysis.

- Niel MacDonald, *Federal Technology Report*

### Assistive Technology Book Opens New Fields to Public

Public and private sector employers, educators, rehabilitation specialists, occupational and physical therapists, and consumers of assistive technology products will have access to the most comprehensive directory of assistive technology (AT) manufacturers ever published.

The book, *Assistive Technologies: Creating a Universe of Opportunities for People with Disabilities*, lists almost 700 manufacturers of AT products in the United States, Canada, Europe, and Asia.

Employers looking for information on products benefiting speech impaired, blind, visually impaired, deaf, hearing impaired, physically

challenged, and mobility challenged individuals will find information on all these areas in the book.

Additionally, the book will include summaries of federal legislation passed on disability issues and Supreme Court decisions on disability issues within the last 30 years.

**More info:** John M. Williams, 703-404-9557.

### NASA Hosts Nano

The NASA Tech Briefs Nanotech 2003 Conference is scheduled for October 23-24, 2003, in Boston, Mass.

The event focuses on real-world applications of "small tech" in the aerospace, biotechnology, electronics, and related fields.

Federal laboratories, universities, and companies will present partnership opportunities emerging from their latest R&D in carbon nanotubes, nanoscale materials and probes, and MEMS.

Targeted to management-level technical professionals, the conference also will explore the "bigger picture" of where the technology is headed; who the major players leading the nanotech revolution are; and how companies can secure federal, state, or venture capital funding. It includes a reception and tour of Boston University's Photonics Center and Nanotechnology Labs, where attendees will network with world-renowned researchers and scientists.

**More info:** [www.techbriefs.com/nano](http://www.techbriefs.com/nano)



## Lab Work Mars Rover Launched

When the Mars exploration land rovers *Spirit* and *Opportunity* launched successfully from Cape Canaveral on June 10 and July 7, a part of the **Air Force Research Laboratory (AFRL)** soared with them.

The two land rovers, expected to touch down and explore opposite sides of Mars in early 2004, are powered by rechargeable lithium-ion batteries researched and developed by AFRL's Propulsion Directorate. *Spirit* and *Opportunity* will act as robot geologists while on the surface of Mars.

To search for and characterize a wide range of rocks and soils that hold clues to past water

activity on Mars, NASA needed a more powerful lightweight battery to withstand extreme temperatures and provide more electricity to the rovers. More power will allow them to perform onsite scientific investigations over the course of their 90-day mission and trek up to 40 meters per day.

Researchers in the directorate's power division were already working on a new type of battery that exceeded commercial battery performance and fit NASA's needs. The result was a joint lithium-ion battery program established by **NASA Glenn Research Center**, the **Jet Propulsion Laboratory (JPL)**, and AFRL's Propulsion Directorate.



Exploration rover *Opportunity* takes off from Cape Canaveral, Fla., for Mars, where it will be powered by AFRL technology.

"The program wouldn't have been as successful without the cooperation of NASA Glenn/ JPL," said **Steve Vukson**, a directorate chemical engineer. "We developed the technology, but the battery was designed by JPL and Lithion, a division of Yardney Technical Products."

Continued collaboration between NASA, the Army, and the Air Force is resulting in further development of the battery technology for widespread space and military applications, according to Vukson. The battery is lightweight, rechargeable, and much more powerful than its predecessors.

The rover needs about 100 watts (equivalent to a standard light bulb in a home) to drive, NASA officials explained. Comparatively, the Sojourner rover's solar arrays provided the 1997 Pathfinder mission with around 16 watts of power at noon on Mars. That's equivalent to the power used by an oven light. This extra power will potentially enable the rovers to conduct more science.

To get the most out of their new technology, the two rechargeable batteries are stored in a warm electronics box, or WEB, that houses the rover's power system, explained Vukson. "It contains a heater that helps maintain the temperature of the batteries' environment, allowing it to operate in the extreme temperatures of space."

The true test of the batteries' capabilities will be challenged when the rovers arrive in January 2004 and begin to explore, fully powered by AFRL and NASA technology.

**More info:** Kimberly Turner, ASC Public Affairs, (937) 255-1114/2725, or <Kimberly.turner2@wpafb.af.mil>



## FLC NewsLink

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# Tech Watch

## Federal Laboratory Technologies Ready for Transfer

### Manufacturing Fiber's Achilles Heel

Reinforcements of composites can consist of fibers, particles, or whiskers. They each have their own unique uses, but long fibers are the most common and have the greatest influence on properties of the composite. Fibers add strength to the composite in the direction of the long axis.

The interface between a fiber and a polymer matrix is the Achilles heel of a glass/polymer composite. Researchers from the **Pacific Northwest National Laboratory** have set out to strengthen this Achilles heel.

Adhesion between the two phases is critical, as is the degree of flexibility within the interfacial region. A glass surface composes a polar hydrogen bonding chemical environment, whereas the polymer matrix tends to be more hydrophobic and non-polar. The net result is that the interfacial interactions are weak, leading to poor adhesion and facile interfacial cleavage or displacement.

A novel surface modification of the reinforcing fiber—a coupling agent consisting of a self-assembled monolayer (SAM)—results in greater mechanical strength of the polymer and reinforcing fiber bonding, thus significantly increasing the composite's tensile and flexural properties. The complete and uniform coverage afforded by the SAM spreads the load evenly over a large area of the glass fiber, reducing composite failure due to fiber shear. This application would be quite useful in high fatigue applications or even in severe composite environments that could increase or maintain the physical properties of the material.

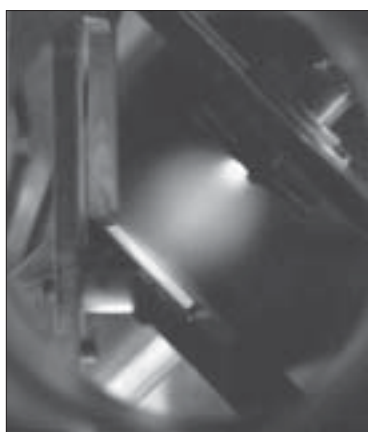
**More info:** Ron Thomas, 509-372-6042, <ron.thomas@pnl.gov>

### Materials NAVY RESEARCH LAB PROMOTES CERAMIC VERSATILITY

Researchers from the **Office of Naval Research Laboratory** have drawn on their powerful interdisciplinary scientific expertise to develop a new technique for manipulating ceramic materials.

Pulsed laser deposition (PLD) is a new technique for the deposition of thin films of biocompatible ceramics. PLD is especially well-suited to the deposition of bone-like ceramics (e.g., hydroxylapatite, calcium phosphates) onto metal, ceramic, semiconductor or polymer substrates for potential application in medical implants, prosthetic devices, and biocompatible probes or sensors.

The degree of control over film characteristics offered by PLD exceeds that of other known deposition techniques presently applied to the production of thin films of biocompatible ceramics and the technique is very versatile.



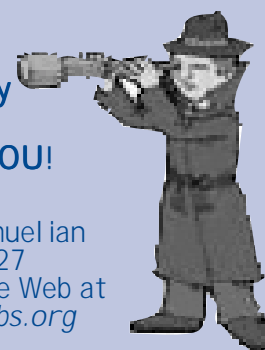
*The Office of Naval Research Laboratory's new technique for the deposition of biocompatible ceramics is well-suited for a host of applications in many different environments.*

- PLD is capable of depositing hydroxylapatite (HA) in-situ in crystalline form, uncontaminated by other calcium phosphate phases.
- Simple adjustment of PLD parameters allows the deposition of amorphous films or other calcium phosphate phases, if desired.
- PLD can be conducted in both reactive and nonreactive gaseous environments, allowing control of the chemical composition of the films.
- The deposition parameters can be varied in-situ to produce films of graded composition, phase, and density of microstructure to optimize bioreactivity and resorbability.
- Adhesion of PLD-HA films exceeds the yield strength of the substrates for substrates comprising material typically used for prosthetics (e.g., Ti-6Al-4V).

**More info:** Dr. Catherine M. Cotell, Technology Transfer Office, 202-404-8411, <cotell@nrl.navy.mil>

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## Proven to Work

### REVOLUTIONARY TUNGSTEN PHOTONIC CRYSTAL COULD PROVIDE MORE POWER

You can't get something for nothing, physicists say, but sometimes a radical innovation can come close.

Researchers at **Sandia National Laboratories** (SNL) —exceeding the predictions of a 100-year-old law of physics—have shown that filaments fabricated of tungsten lattices emit remarkably more energy than solid tungsten filaments in certain bands of near-infrared wavelengths when heated.

This greater useful output offers the possibility of a superior energy source to supercharge hybrid electric cars, electric equipment on boats, and industrial waste-heat-driven electrical generators. The lattices' energy emissions put more energy into wavelengths used by photovoltaic cells that change light into electricity to run engines.

Because near-infrared is the wavelength region closest to visible light, the day may not be too distant when tungsten lattice emissions realized at visible wavelengths provide a foundation for more efficient lighting—the first significant change in Edison's light bulb since its invention.



**WATCH OUT, IT'S LIVE:** from left, Shawn Lin, Jim Bur, and Jim Fleming discuss the possibilities of tungsten photonic lattices as one glows in the left foreground.

"This is an important and elegant work," says Cal Tech professor **Amnon Yariv** of the research achievement. Yariv is a member of the National Academy of Engineering and a leading figure in quantum optics research.

The work has been granted two patents, with another pending. Two papers describing the advance have been accepted by the journal *Optics Letters*. Another will be published by *Applied Physics Letters*.

Submicron-featured lattices—which resemble very tiny garden lattices carefully stacked one atop the other—can be mass produced cheaply with today's computer chip technologies.

The lattices are also known as photonic crystals because of the crystalline regularity of the spacing of their components. At first, such crystals were of interest because they could bend specific frequencies of light without loss of energy.

The innovation of the current method is to use the channels not to bend light, but to permit input energy to exit only in the desired frequency bands. The increased amount of usable energy available from lattices (also known as photonic crystals) at specific frequencies is important to engineers dealing with electricity-driven engines.



*A tungsten photonic lattice glows in a vacuum chamber as SNL researcher Shawn Lin inspects an iridescent disk that contains approximately 1,000 tungsten photonic lattices. Most emissions from these filaments are in the near-infrared range, and may improve efficiencies of heat-driven engines like hybrid electric automobiles.*

A photonic lattice absorbing energies from a power plant generator's excess heat could release it at higher frequencies that are readily absorbable by the photovoltaic cell that powers electricity-driven engines.

While such engines—best known in the form of electric-powered cars exist, their efficiencies have been much lower than hoped because their receivers cannot absorb incoming energies across the wide spectrum of infrared radiation generated as unwanted heat, but only from limited bands within the broad range.

Here, the lattice could serve as a kind of funnel, forcing the heat radiation into predetermined frequency bands.

**More info:** Neal Singer, (505) 845-7078, <nsinger@sandia.gov>

**Law Enforcement** from page 1

special technology needs in threat assessment and critical incident response.

An example of a successful technology transfer involved bone conduction technology from the **Naval Coastal Systems Station**, Panama City, Fla., which was used by the Navy SEALs.

The Navy licensed the technology to Sensory Devices, Inc., which now provides Radioear headsets to the public safety community.

**Robert Saba**, OLETC consultant and coordinator for the Fire Fighting Task Force, linked the parties together to create the successful commercialization.

Jerry Bortman and Robert Saba will continue to provide a link between the labs and the law enforcement and corrections community.

OLETC's job is to provide commercialization assistance to R&D labs, companies and inventors, helping to move their prototypes to the marketplace.

**More info:** Jerry Bortman, 724-942-4963, [ejassociat@bigplanet.com](mailto:ejassociat@bigplanet.com), or visit [www.oletc.org](http://www.oletc.org)



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**Lab in the Limelight** from page 1

center has a full life-cycle capability—in other words, it has the infrastructure and personnel to support all stages of technology development in-house—from basic research to rapid prototyping and even limited production. While its scientists and engineers continue to focus on the DOD CB technology base, ECBC also provides a range of services to other government agencies and private industry, including the United States Central Command and The Gillette Company.

ECBC maximizes its resources by encouraging partnerships with government, industry and academia for chemical surety work, scientific studies and analysis, equipment testing, and personnel training.

In the days, months, and years following the events of 9/11, ECBC responded to a wide

range of homeland security needs. The center has transitioned many military technologies to applications used by those who keep civilians safe and secure, in keeping with its robust technology transfer program. The program, which helped earn

the FLC Laboratory of the Year award in 2002, establishes collaborative relationships to ensure the open exchange of ideas between ECBC and the nation's most promising researchers and



*ECBC conducts groundbreaking research and development work in state-of-the-art lab facilities, including the Biological Safety Level 3 laboratory shown below.*



*ECBC's personnel are among the best and brightest in their fields, which include chemistry, microbiology, toxicology, aerosol physics, and computer-aided engineering.*

innovators. The center uses innovative means, including its web site, [www.ecbc.army.mil](http://www.ecbc.army.mil), to reach out to potential partners.

ECBC, with its unique capabilities and critical mission, plays a broad yet specific role within the

Army and the joint services. Armed with nearly a century of hands-on CB defense expertise and personnel recognized throughout the industry for their work, ECBC ensures ground-floor integration of detection, protection and decontamination technologies within warfighter products—while supporting the nation's efforts to defend the homeland.

**More info:** Tim Lavery or Pam Junot at 410-536-8462 or [lavery\\_timothy@bah.com](mailto:lavery_timothy@bah.com)

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**Award-winning techs** from page 1

and eight commercial licenses have been issued.

EnergyPlus development was led by Fred Buhl, Joe Huang, and Frederick Winkelmann of LBNL's Environmental Energy Technologies Division. Collaborators include **Curtis Pedersen**, **Richard Liesen**, and **Richard Strand** of the **University of Illinois at Urbana-Champaign**; **Linda Lawrie** of the **U.S. Army's Construction Engineering Research Laboratory**; **Drury Crawley** of the Department of Energy's **Office of Energy Efficiency and Renewable Energy**; **Donald Shirey** of the **Florida Solar Energy Center**; **Daniel Fisher** of **Oklahoma State University**; **William Bahnfleth** of **Pennsylvania State University**; **William Beckman** of the **University of Wisconsin**; and Michael Witte and Jason Glazer of GARD Analytics, Inc.

The second award was for a collaboration involving extreme ultraviolet lithography

The photolithography techniques that have miniaturized electronics and made today's laptop computers as powerful as a roomful of 1970s-era

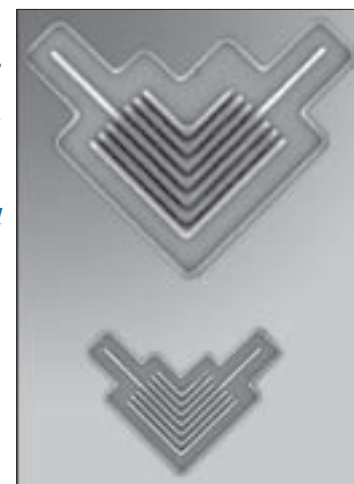
mainframes will soon reach their natural limit. Printing smaller chip features will require extreme ultraviolet light, whose wavelength is too short to focus with ordinary lenses.

To meet this challenge, LBNL scientists joined with scientists from **Lawrence Livermore National Laboratory (LLNL)** and **Sandia National Laboratories (SNL)** to form a Department of Energy Virtual National Laboratory. Together they devised and tested a chip-printing "stepper" that uses coated mirrors instead of lenses to bend and focus light.

In 2001, the first full-scale prototype demonstrated the possibility of making microprocessors with 10 times as many transistors and memory chips as today's best, operating 10 times as fast and storing 40 times as much information. In 2002, Intel Corporation placed an order for the first production model stepper.

More than 200 scientists have participated in the Virtual National Laboratory. At LBNL, the effort has been led by **David Attwood** of the

*Scientists from LBNL, LLNL, and SNL formed a Department of Energy Virtual National Laboratory. Together they devised and tested a chip-printing "stepper" that uses coated mirrors instead of lenses to bend and focus light.*



Center for X-Ray Optics in the Materials Sciences Division, at SNL by **Richard H. Sulen**, and at LLNL by **Donald W. Sweeney**. The laboratories continue to work closely with industry representatives from Advanced Micro Devices, IBM, Infineon, Intel, and Motorola.

**More info:** [www.lbl.gov](http://www.lbl.gov).

Inside the FLC

## World's Best Techs

Researchers and scientists seeking seed capital or corporate licensing partners are strongly encouraged to participate in the next World's Best Technologies Showcase, slated for March 22-23, 2004, in Arlington Tex.

**wbt 04** Up to 75 technologists will be selected for the WBT04, and they will receive free exhibit space and the opportunity to make a brief presentation. Prospective exhibitors are encouraged to apply online beginning September 1, 2003.

WBT04 is a national competition designed to support the movement of world-class technologies from leading laboratories, universities, and federally funded research facilities into the marketplace. The event is produced in cooperation with the FLC and the National Association of Seed and Venture Funds. The Arlington Chamber of Commerce and the Department of Commerce will be hosting WBT04. Additional committed sponsors include Procter & Gamble, University of Texas System, Texas Department of Economic Development, and the Department of Energy.

The inaugural WBT02 showcased 37 technologies and attracted approximately 200 attendees, including 60 seed investors and corporate licensors. In just 10 months, WBT02 exhibitors have since attracted over \$24 million in venture capital and R&D funding.

For more information, visit the WBT website at <[www.wbt04.com](http://www.wbt04.com)> or contact the event producer, Paul Huleatt, at 602-795-8825.



Former FLC Chair Ann Rydalch discusses technology transfer with exhibitors during World's Best Technology 2002 in Pittsburgh, Pa.

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## FLC Assists in Making a Difference

During the week of July 20, 2003, a number of events in Washington and elsewhere celebrated the 13<sup>th</sup> anniversary of the Americans with Disabilities Act. One of these events, *Technology for All Americans*, was an exhibition of assistive technologies hosted by Department of Commerce (DOC) Secretary Don Evans in the main lobby of the DOC on July 24.

In 1996, **Ty Taylor**, then FLC Washington, DC Representative, was invited to speak at a symposium during the Paralympic Games in Atlanta. These games use the summer Olympics site for a competition of the physically handicapped from around the world.



Commerce Undersecretary Phil Bond announces the eight-point initiative.

Taylor spoke about the FLC and the opportunities to transfer technology from the federal laboratories. After listening to these courageous people describe some of the challenges of physical handicaps and the role new technology could play in making a difference, Taylor knew the FLC could work with the laboratories to make a difference.

As a result of the FLC's diligent efforts and results in this area, Ben Wu, Deputy Undersecretary of Commerce for the Technology Administration, asked the FLC to assist the DOC in planning and hosting an exhibition of assistive technologies. He also invited the FLC to share ideas about what the DOC, working with others, could do to ensure "Technology for All Americans."

President Bush created the New Freedom Initiative as a commitment to address accessibility barriers and to increase the development of, and access to, assistive and universally designed technologies. The FLC and the federal labs are playing a crucial role in that regard.

On behalf of Secretary Evans, Philip L. Bond, Undersecretary of Commerce, Technology Administration, announced during the *Technology for All Americans* exhibition an eight-point DOC Initiative as a furtherance of the New Freedom Initiative. The initiatives are: data analysis to increase export promotion opportunities; creating an industry forum for manufacturing, regulatory, and trade impacts; cataloguing trade barriers; manufacturing technical assistance; facilitating measurement



From left, FLC Technology Locator Sam Samuelian and FLC DC Representative Dave Appller explain to Commerce Deputy Secretary Sam Bodman and Deputy Undersecretary Ben Wu the role of the FLC and how crucial the laboratories are in supporting assistive technology.

and private sector standards; developing and promoting technology transfer; assisting coordination of assistive technology R&D; and reporting progress to the Secretary of Commerce by March 2004.

The FLC received great exposure through the visits of several distinguished individuals to the FLC booth. The list included Undersecretary Bond; Dr. Robert H. Pasternack, Assistant Secretary for Special Education and Rehabilitative Services, who served as principal advisor to the U.S. Secretary of Education on all matters related to special education and rehabilitative services; Dr. W. Roy Grizzard, Assistant Secretary of Labor for Disability Employment Policy; Rhett B. Dawson, President and CEO, Information Technology Industry Council (ITI); and Dr. Judith Harkins, Director of Technology Access Programs, Gallaudet University.

In addition to these attendees and the many hundreds of others, Dr. Samuel Bodman, Deputy Secretary of Commerce, spent over an hour visiting many exhibitors.

Dr. Bodman said the FLC makes a very positive impact on the ability to leverage the taxpayers' investment in federal research and development into the commercial marketplace.

While at the FLC booth, Bodman was delighted to receive information highlighting the laboratory technologies being transferred into new assistive technology products.

The event proved to be a great showcase of how the FLC can assist in making a difference.



Eric Soederberg discusses the "Independence™ IBOT™ Mobility System" with FLC Technology Locator Sam Samuelian. The IBOT uses self-balancing technology, in part developed by federal laboratories, that enables the device to elevate the occupant up to the eye level of standing people, climb stairs, and travel uneven terrain.

**FLC**

### Pilot Programs from page 1

DOD has a network of 80 in-house labs and 26 test centers to conduct and manage some of its military R&D activities.

Studies of these facilities since 1994 by various blue-ribbon panels have identified "significant personnel and resource problems," ranging from a need for greater flexibility in personnel rules for scientists and engineers to investing in upgraded research facilities and equipment.

The Secretary of Defense was authorized by Congress, under its FY99 & FY00 actions, to assign one laboratory and one test center in each service for pilot programs to explore innovative methods for partnership with universities and private sector entities to conduct defense R&D; attract a workforce that achieves a balance between permanent and temporary personnel, and appropriate skill and experience levels; develop

or grow innovative operating methods that can provide "more defense research for the dollar"; and waive any restrictions on using these methods that are not required by law.

In its July 28 cover letter to Senate Armed Services Committee Chairman John Warner (R-Va.) and ranking minority member Carl Levin (D-Mich.), GAO recommends that the Defense Secretary should inform Congress by March 31, 2004, of his department's aims for human capital and business operations at DOD labs and test centers, how it plans to achieve them, and what mechanisms it intends to use.

Of 178 initiatives proposed by labs and test centers under the pilot programs since 1999, GAO found only four (2%) had been implemented using the programs' authorities.

These initiatives involved donating lab equipment directly to local schools; waiving top-

level certification of certain service agreements with private industry; streamlining cooperative agreements to facilitate collaborative work agreements with outside activities; and granting temporary relief from some mandatory personnel placement reviews.

According to GAO investigators, almost half (48%) of the initiatives were blocked or dropped, while 26% were on hold and 24% were implemented with other authority.

DOD labs proposed 147 initiatives. Of these, 49 (33%) were for business partnerships and 98 (67%) focused on human capital projects.

Thirty-one initiatives were proposed by DOD test centers, of which the majority 27 (87%) dealt with business/partnership and only 4 (13%) for human capital. An electronic version of the 27-page report (GAO-03-861) can be found at: <<http://www.gao.gov>>

ETC...

## T<sup>2</sup> Class is in Session

Training is hot on the agendas of this year's FLC regional meetings! Representatives from the FLC Education and Training (E&T) Committee will be on hand to both support these efforts and to provide attendees with information on upcoming training-related activities and committee projects for FY 2003. The committee will also gather input on training needs and preferences.

*TechEnterprise 2003*, the joint FLC Far West and Mid-Continent regional meeting, held in Honolulu, Hawaii, August 18-21, 2003, offered opportunities to explore Hawaii's technology programs and companies in depth, as well as become familiar with the activities of the Office of Naval Research – Pearl Harbor facility.

Training segments on licensing tools and methods, and alternate energy and fuel cell technologies were highlighted. **Pat Rodriguez**, of the Air Force Research Laboratory, represented the E&T Committee.

The FLC Mid-Atlantic regional meeting, which will be held at Rocky Gap Lodge, Flintstone, Md., September 9-11, 2003, is focusing on technology transfer resources, technology evaluation, and

technology partnership opportunities available within the region. Michelle Riley, a patent attorney, will present the technology evaluation session. It is anticipated that **Lynn Murray**, E&T Committee Chair, and **Terry Lynch** of the **National Institute for Science and Technology** (NIST) will represent the E&T Committee.

The Southeast Regional meeting, *Business Development & Commercialization and the Role of Federal Laboratories, Industry, and Academia*, will be held in Charleston, S.C. from September 17-19.

Experts in the fields of partnership intermediary agreements, technology marketing, patent training for scientists and technologists, and

tools for building management support will provide targeted training. Continuing Education Units (CEUs) will be offered to all participants. E&T Committee representatives are anticipated to be Larry Dickens and Joan Miller.

Last, but certainly not least, the FLC Northeast/Midwest joint regional meeting, *Building Collaborative Partnerships*, will be held at the Crowne Plaza Times Square in New York City from September 30-October 2, 2003.

Four hours of intellectual property training will be presented. Jesse Erlich will address the topic of intellectual property/government rights, and

Emmett Murtha will examine technology evaluation/licensing issues. CEUs will be offered. In addition, Sam Samuelian will discuss the FLC Technology Locator, and Lynn Murray will represent the E&T Committee.

See you in class!



Emmett Murtha, left, and Jesse Erlich, right, are just two of the many high-level experts who will be presenting at upcoming FLC regional meetings.



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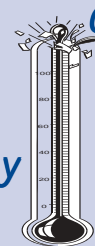
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