

# FLC NEWS LINK

March  
2004

FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER  
*The Only Government-wide Forum for Technology Transfer*

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

World's Best  
Technology 2004  
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March 21-23, 2004

Generic  
Biopharmaceuticals  
Global Summit  
Washington, D.C.  
March 25-26, 2004

Allicense 2004  
San Francisco, Calif.  
April 6-7, 2004

Society of Petroleum  
Engineers  
Tulsa, Okla.  
April 19-21, 2004

FLC National Meeting  
*Mission-Driven  
Partnerships*  
San Diego, Calif.  
May 3-7, 2004

Bio 2004  
San Francisco, Calif.  
June 6-9, 2004

WorldFuture 2004  
Creating the Future Now  
Washington, D.C.  
July 31-Aug. 2, 2004

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calendar of events

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

Dr. Martin Cooper, a former general manager for the systems division at Motorola, is considered the inventor of the first modern portable handset. Cooper made the first call on a portable cell phone in April 1973. The call was to rival Joel Engel, Bell Labs' head of research.

## Inside



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## Navy License Enhances Security, Protects the Queen

The Naval Facilities Engineering Service Center (NFESC) at Port Hueneme, Calif., has licensed its port security barrier technology to Harbor Offshore, Inc. (HOI), a Ventura, Calif.-based marine contractor.

Less than two weeks after signing the licensing agreement, HOI had its first customer in Port Everglades, Fla.

Port Hueneme's initial interest was to protect the winter home of the new *Queen Mary II*, the world's largest and most expensive ocean liner, when she arrived from her maiden voyage January 26, 2004.

The U.S. Navy protects the *Queen Mary II* by escorting her into port with the guided missile destroyer *USS Carney*. According to NFESC's Information



NFESC's port security barrier has been licensed to Harbor Offshore, Inc. of Ventura, Calif. The technology is being used to protect the *Queen Mary II*, the largest ocean liner in the world.

Technology Transfer Branch Head, and FLC Far West Regional Coordinator, **Kurt Buehler**, "Our port security barrier technology, licensed to HOI, will help keep her secure in her winter

home port. These barriers can help protect all the valuable assets within a harbor.

We want to see these commercialized, and we want to help out the private sector and the commercial world as well."

Security officials at the port also hope the barrier system will add a layer of security to the port's three petroleum slips.

The Navy began developing the fence system in response to the bombing of the *USS Cole* in 2000.

Port security has been comprised of patrols, vessel patrols, the Coast Guard, and commercial security vessels.

The port security barrier system consists of a floating fence constructed of a synthetic net with a steel base that is moored to the ground with deadweight anchors. The barriers can have a gate, or

See *Protect the Queen*, page 4

## DOE Management & Operation Contract Plans

by Neil MacDonald  
*Federal Technology Watch*

The Department of Energy confirmed last week that it will compete management and operating (M&O) contracts for several of its national laboratories that expire later this year or in 2005.

While decisions on the precise timing and procedures for these competitions have still to be agreed on by DOE officials, the facilities involved are: **Ames National Laboratory** (expires December 2004), **Argonne National Laboratory** (expires September 2004), **Lawrence Berkeley National**



Argonne National Laboratory is one of five national laboratories undergoing a management contract review.

**Laboratory** (expires January 2004), **Lawrence Livermore National**

**Laboratory** (expires September 2005), and **Los Alamos National Laboratory** (expires September 2005).

Public Law 108-137 (the Energy and Water Development Appropriations Act of 2004), enacted on December 1, 2003, states that no FY04 funds, or those for any prior fiscal year, be used for noncompetitive M&O contracts unless the Energy Secretary provides public notice within 60 days and submits written notification to the Senate and House Appropriation committees.

See *Lab Contracts*, page 4

## DC on T<sup>2</sup>

by Dave Appler  
*FLC Washington, DC Representative*

With the signing of the Omnibus Budget Bill, the FY 2004 appropriations were completed at the end of January — almost 4 months after the start of the fiscal year. Within days, the president submitted his FY 2005 budget request to Congress. And where does the FY 2005 R&D budget stand? As a total, it's about 5% higher. Much of the increase is in Defense and Homeland Security and is offset by some major decreases in other agencies. Even in Defense, basic and applied research are slated for 4% and 13% cuts, respectively, while the development budget grows by 8%.



Dave Appler

See *DC on T<sup>2</sup>*, page 5

## Lab in the Limelight: Brookhaven

Established in 1947 in Upton, N.Y., **Brookhaven National Laboratory** (BNL) is a multi-program national laboratory operated by Brookhaven Science Associates for the U.S. Department of Energy (DOE).

With 3,000 scientists, engineers, technicians and support staff, and over 4,000 guest researchers annually, the laboratory has been awarded six Nobel Prizes for its research and development efforts.

BNL's role for the DOE is to produce excellent science and advanced technology with the cooperation, support, and appropriate involvement of its scientific and local communities. The fundamental elements of

the laboratory's role in support of DOE strategic missions are to:

- Conceive, design, construct, and operate complex, leading edge,



A view of the superconducting magnets at BNL's Relativistic Heavy Ion Collider. As gold particles zip along the collider's 2.4-mile-long tunnel at nearly the speed of light, 1,740 of these magnets guide and focus the particle beams.

See *Brookhaven*, page 4



## Fed Labs Flash

Technology Transfer Notes From Within the Federal Laboratory Community

### Identification, Please

On January 8, Governor Robert L. Ehrlich, Jr. announced that Lexington Park, Md.-based PosID, Inc. received \$50,000 from the Maryland Technology Development Corporation's (TEDCO) Maryland Technology Transfer Fund (MTTF).

PosID is developing ThermoID, a biometric authentication system that uses thermal variations in the thumb and fingertips for identification purposes.

The company has already developed a demonstration prototype, but seeks to simplify the technology by building a beta-type version that will incorporate the entire system into a PC card form.

The MTTF award will help PosID finance the new development, while the National Security Agency (NSA) will collaborate with PosID on the testing of both versions.

"Information security is a growing technology sector, and it is important that Maryland's small businesses have access to this technology from the federal labs located in our state, such as NSA," said Governor Ehrlich.

"These efforts, along with a forthcoming report from the Commission on the Development of Advanced Technology (Pappas Commission), will identify important initiatives to advance the state's technology communities."

**Richard C. Schaeffer, Jr.**, Information Assurance Deputy Director at NSA, said, "NSA is delighted to work with the state to assist small innovative companies with technology development critical to NSA delivering on its mission."

PosID's ThermoID processes infrared patterns in the fingertips, using a camera to measure the thermal properties of blood vessels, muscles and fat deposits—characteristics that are unique to each individual.

The new system differs from other biometric methods in that it is not dependent upon background lighting, allowing for flexibility and portability. Also, unlike fingerprints, thermal properties cannot be manipulated or stolen. Preliminary testing on several thousand image samples and the system shows an extremely high recognition rate.

### NIST Neutron Researcher Wins Inaugural Society Award

**J. Michael Rowe**, director of the **National Institute of Standards and Technology's** (NIST) Center for Neutron Research (NCNR), will receive the first-ever Clifford G. Shull Award from the Neutron Scattering Society of America (NSSA).

Established in 2002 in memory of the Nobel Prize winner of the same name, the award honors those who have made outstanding contributions to the field of neutron science.

In addition to his influential scientific work, NSSA officials said they selected Rowe to receive the inaugural award for being "a leader in the design of the latest generation cold neutron sources, including the most efficient hydrogen cold source currently operating in the world at the NCNR" and for providing leadership over 15 years as head of the NCNR that made the center the "most important and widely used neutron facility thus far developed in the United States."

More than 1,900 participants from academia, industry and government conducted research last year that used neutrons at the NCNR to probe the structure and dynamics of materials.

Rowe plans to retire this year after a 31-year career at NIST.

NSSA represents more than 1,000 professionals in 26 nations. NSSA intends to present Rowe with the award at its biennial conference in June.

### JLAB Ranked Highly

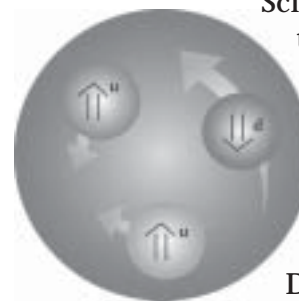
The discovery of the pentaquark has been named among the top science stories for 2003.

Researchers working at the Department of Energy's **Jefferson Laboratory** (JLAB), located in Newport News, Va., are among those to identify some of the most convincing evidence yet of the subatomic particle's existence.

*Discover Magazine's* January 2004 issue listed the discovery at #9 in its "100 Top Science Stories of 2003"

tally. And the American Institute of Physics listed the discovery among its top 3 physics stories for 2003 in its December 2 edition of *Bulletin of Physics News*.

According to JLAB's **Volker Burkert**, the pentaquark discovery could have profound implications not only for baryon spectroscopy, but for hadronic physics, a major research focus at many nuclear physics laboratories.



## Lab Work

### AFRL Betters Brakes, Advances Safety

**George Schmitt**, of the **Air Force Research Laboratory's** (AFRL) **Materials and Manufacturing Directorate** (ML), received the Federal Laboratory Consortium for Technology Transfer's Midwest Region Technology Transfer Award for his work related to brake-by-wire (BbW) technologies.

This successful transfer of Air Force technology pays dividends to the consumer, industry and the Air Force.

Schmitt's leadership and contributions in the area of BbW and its related technologies could revolutionize how electrical systems in

aircraft are constructed and how braking systems are manufactured and implemented in next-generation vehicles.

In June 2001, AFRL and Delphi Automotive Systems signed a technical collaborative agreement to bring this new technology to the automotive industry.

While conventional brake systems found on cars today are hydraulic, BbW stops a vehicle by sending electrical signals to the brake system.

Under Schmitt's leadership, experts from the ML's Air Vehicles and Propulsion Directorate addressed electrical motors and actuators; high-temperature insulation materials; reconfigurable control technologies; fault-tolerant architectures; and reliable wiring and connectors.

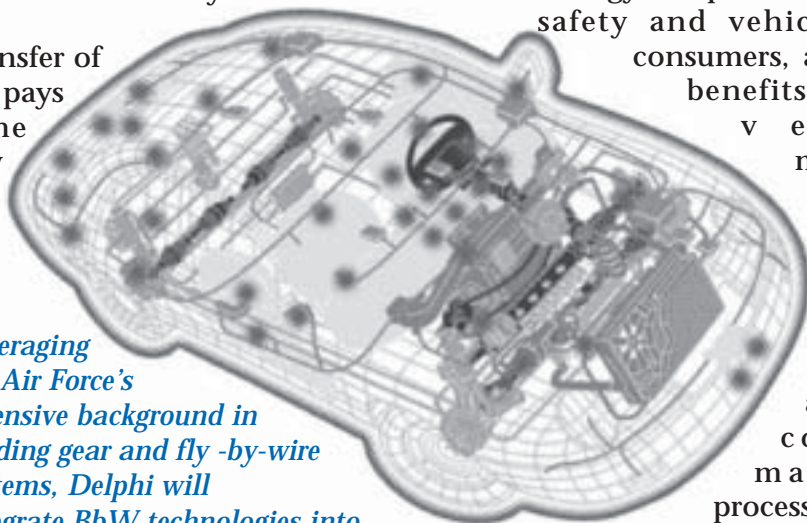
The BbW technology is expected to offer increased safety and vehicle stability to consumers, and will provide benefits to automotive

vehicle manufacturers, who will be able to combine vehicle components into modular assemblies using cost-effective manufacturing processes.

Using BbW technology, the Air Force fully leverages its extensive background in landing gear and fly-by-wire systems, while Delphi will work to integrate BbW technologies into next-generation vehicle handling and safety systems.

Introducing the technology to the commercial arena benefits the Air Force by creating a demand for shared components, thus reducing the component cost to government and industry.

More info: Visit the AFRL Materials and Manufacturing Directorate web site at <[www.ml.afrl.af.mil/tech\\_transfer.html](http://www.ml.afrl.af.mil/tech_transfer.html)>.



*Leveraging the Air Force's extensive background in landing gear and fly-by-wire systems, Delphi will integrate BbW technologies into next-generation vehicle handling and safety systems.*

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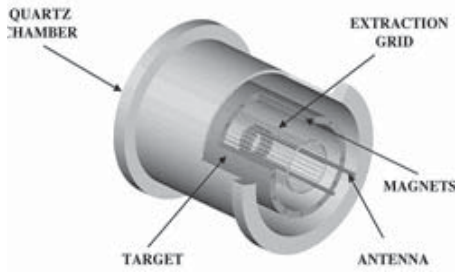
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## Tech Watch: Federal Laboratory Technologies Ready for Transfer

### Berkeley Generates Generator Tech

Scientists at **Lawrence Berkeley National Laboratory (LBNL)** have developed innovative neutron generators that can be tailored to meet a variety of specifications. The generators invented by **Ka-Ngo Leung** and colleagues are unusual because they are compact, designed to be long-



*Diagram of a generic cylindrical neutron generator in a non-nested configuration.*

lasting and inexpensive to construct, yet capable of using safe deuterium-deuterium reactions to produce a high neutron yield or flux. They can also be designed to use tritium-tritium reactions to generate neutrons across a broad energy spectrum or deuterium-tritium reactions to produce higher energy neutrons.

Neutron generators like these can significantly enhance homeland security.

X-ray imaging systems widely used in most airports and cargo inspection stations reveal object shapes and detect metals. Neutron-based techniques, however, are materials-specific—they can be used to identify the elemental compositions of shipping and luggage contents. Fissile materials, as well as conventional and plastic explosives, can be

detected using neutron sources.

The LBNL neutron generators consist of RF-driven plasma ion sources, extractors of various designs, acceleration electrodes, and titanium-covered targets. Conventional generators are usually short-lived because the target's isotopes are quickly consumed. The target in LBNL's generators, however, is constantly replenished by ions from the plasma source. These devices may last thousands of hours longer than conventional generators.

The LBNL portfolio includes a multiple beam system for imaging luggage, small neutron tubes for oil well logging while drilling (LWD), as well as designs suitable for cargo interrogation, tumor therapy, and structural inspection. Because neutron generators can be used for imaging and interrogating so many materials, the applications listed for each invention are not exhaustive.

All of LBNL's neutron generators have patents pending and are available for licensing or collaborative research.

**More info:** For licensing information, contact LBNL at (510) 486-6467 or <TTD@lbl.gov>.



*LBNL's Dr. Ka-Ngo Leung has been developing neutron generators for ten years.*

### Please Apply Starch

Inventors **George Fanta** and **Frederick Felker** of the **Agricultural Research Service** have created a novel method for using hot, jet cooked, water solutions of starch to form thin, water-receptive coatings on plastic surfaces such as polyethylene.

These starch coatings are inexpensive, nontoxic, and biodegradable. A water-receptive starch coating can enhance adsorption of water-based printing inks and dyes, improve the compatibility of plastic articles with water-based reagents and body fluids, reduce buildup of electrostatic charges on plastic surfaces, reduce sticking or blocking between plastic sheets, reduce friction, and improve adhesion properties.

Although these starch coatings do not separate from plastic surfaces, even after prolonged standing in water, the coatings can be removed by gently rubbing the water-wet surfaces.

This invention has many industrial applications. Major users include companies that manufacture electronic components sensitive to electrostatic discharge and companies engaged in the printing and dyeing of plastic surfaces.

**More info:** Contact George Fanta at 309-681-6356 or <fantagf@mail.ncaur.usda.gov>, reference patent SN09/989,365.

## Proven to Work Sandia Nanotech Goes Platinum



*Sandia researcher John Shelnett and University of New Mexico Ph.D. student Yujiang Song look at platinum at the nanoscale on a new scanning electron microscope at UNM.*

Researchers from the DOE's **Sandia National Laboratories (SNL)** and the University of New Mexico (UNM) have developed a new way of mimicking photosynthetic proteins to manipulate platinum at the nanoscale. The method has the potential to change the metal's properties and benefit emerging technologies.

"While we are in the early stages of research, we see the possibility of manipulating the nanoscale structure of platinum so that we can have control over the size, porosity, composition, surface species, solubility, stability, and other functional properties of these metal nanostructures," said **John Shelnett**, the SNL scientist leading the research effort. "Such control means that the redesigned platinum could be used in many new applications, including catalysis, sensors, and optoelectronic and magnetic devices."

He added that while research groups have reported a few platinum nanostructures—

including nanoparticles, nanowires, nanosheets, and others—the addition of new types of nanostructures is "highly desirable and potentially technologically important."

The idea for the technique is similar to photosynthesis, in which plants use the energy from sunlight to produce sugar. But instead of manufacturing sugar, the new method changes a platinum ion to the neutral metal atoms. The photosynthetic protein mimics this repeatedly, allowing metal to be deposited as desired at the nanoscale.

The method involves putting porphyrins—the active part of photosynthetic proteins—along with the platinum salt in an aqueous solution of ascorbic acid at room temperature. The porphyrins are placed in specific locations in the solution where it is intended that metal should be deposited.

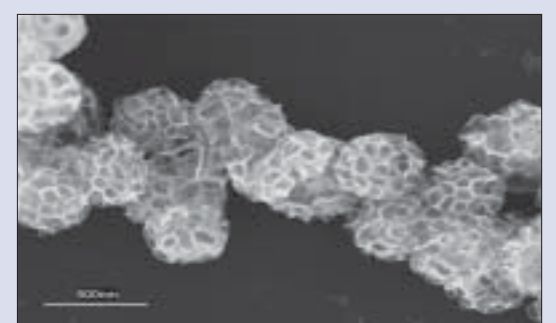
When light is shined on the porphyrins located in detergent structures, the porphyrins excite, becoming catalysts for platinum reduction and deposition. As this occurs, the metal grows onto the surfaces of the surfactant structures as a thin sheet or in other ways.

For the metals platinum and palladium that form these nanostructures, it is enough for the porphyrin molecule to grow only a small metal "seed" particle composed of about 500 atoms. When it reaches this size, the seed starts to catalyze its own rapid growth (by oxidation of ascorbic acid), budding off arms in all directions. The porphyrin

provides a convenient method of making these seeds at the location and time desired, leading to a uniform and selectable nanostructure size.

Since the porphyrin remains attached to the platinum nanostructure and active in the presence of light, it can also perform other functions besides growing itself.

For example when illuminated with light, the platinum nanostructure evolves hydrogen from water. This reaction is similar to one of interest to



*A scanning electron microscope image of platinum-lace nanoballs. Liposomes aggregate, providing a foamlike template for a platinum sheet to grow.*

car manufacturers looking for new ways to build automobiles powered by hydrogen fuel cells.

Shelnett says that in addition to structuring the platinum, the process also happens very fast. "A few minutes in light will create many seeds, which then grow into the mature nanostructures in tens of minutes. And the process is easy to do. It's so simple it's amazing."



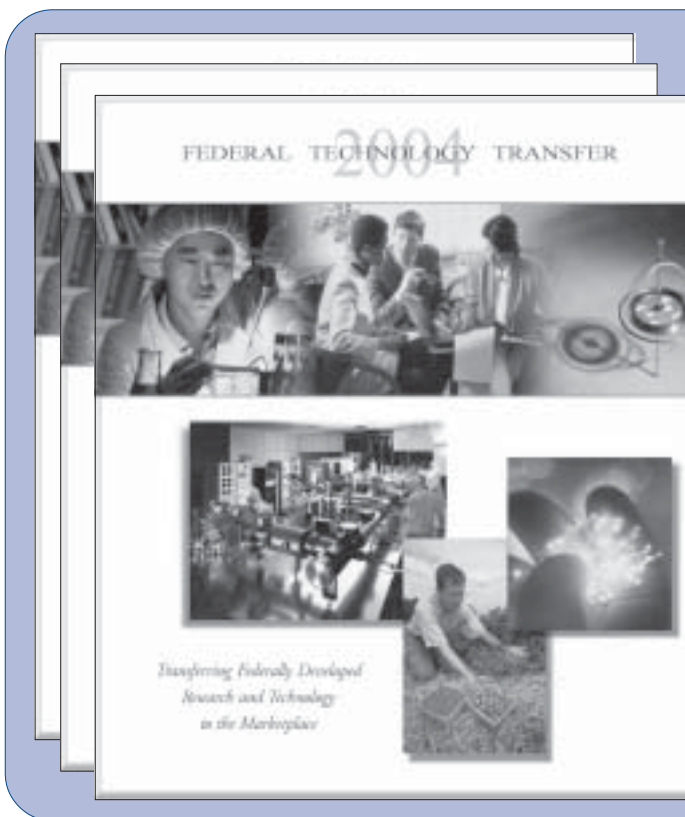
*Lab Contracts, From page 1*

However, this requirement does not apply to an extension for up to two years of an existing noncompetitive M&O contract, if the intent is to allow for the timely award of a new competitive contract or to permit continuity of service between contracts.

Energy Secretary Spencer Abraham had announced last April that he intended to compete the M&O contract for Los Alamos. His decision on the other facilities was made in January.



FLC TFWG National Meeting - San Diego, CA - May 3-6, 2004



## 2004 Federal Technology Transfer

From exotic medical equipment to items filling supermarket shelves, *Federal Technology Transfer 2004* highlights and describes successful technology transfers having their genesis in the federal laboratory system. Being of high potential impact and human interest, the technologies listed in this publication have completed their transition from research to results via the technology transfer process.

To order your copy, contact the FLC MSO at 856-667-7727

*Brookhaven, From page 1*

user-oriented facilities in response to the needs of the DOE and the international community of users.

- Conduct basic and applied research in long-term, high-risk programs on the frontier of science.



- Develop advanced technologies that address national needs and transfer them to other organizations and to the commercial sector.

- Disseminate technical knowledge to educate new generations of scientists and engineers, to maintain technical capabilities in the nation's workforce, and to encourage scientific awareness in the general public.

BNL's major facilities include the:

- Relativistic Heavy Ion Collider (RHIC), the world's newest and biggest particle accelerator for nuclear physics.
- National Synchrotron Light Source

(NSLS), which attracts more users annually than any other research machine in the world.

- Alternating Gradient Synchrotron, home to Nobel Prize-winning research and many pivotal discoveries in high-energy and nuclear physics.

- Accelerator Test Facility, the nation's proving ground for new concepts in generating, accelerating and monitoring particle beams.

- Tandem Van de Graaff Facility, ion sources for hardware testing and supplier of ions for RHIC.

BNL researchers pioneered developments leading to X-ray angiography for noninvasive heart imaging, as well as the discovery of technetium-99m, now used to diagnose heart disease and other ailments in over 11 million Americans each year.

Brookhaven researchers are also credited with the discovery of L-dopa, a drug used to treat Parkinson's Disease.

The laboratory's Nobel Prizes were awarded for research leading to the discoveries of the muon neutrino, CP violation, J/psi particle, and parity violation.

Examples of current research include:

- Pollution-eating bacteria
- Structural studies of the Lyme Disease protein for new vaccines

- Studies of the brain, including the roots of drug addiction, psychiatric disorders, and brain metabolism

- Asbestos-digesting foam
- Quiet jackhammers



BNL's Positron Emission Tomography (PET) facility is a world leader in brain research, including how drugs, mental illness, nicotine, alcohol and aging affect the brain.

- Cocaine addiction treatments
- Effect of CO<sub>2</sub> on ecosystems.

**More info:** Visit the Brookhaven web site at <<http://www.bnl.gov/world>>.

*Protect the Queen, From page 1*

The port security barrier system is comprised of a floating fence constructed of a synthetic net with a steel base, moored to the ground with deadweight anchors.

multiple gates, that can be opened and closed by security personnel.

From concept to steel prototype, the process for the current barrier design took approximately eight months during 2000 and 2001. NFESC tested the barrier designs in wave tanks at the U.S. Naval Academy, building 1:56 and 1:10 scale models in

which the barriers were put through the worst-case environmental conditions.

A full-scale test was conducted with a 38-foot remote control boat, and the data were studied carefully using numerical modeling techniques.

The net result was a demonstrated effectiveness against high-speed boats and proven in-water operational performance with a simple, low-cost design.

HOI Project Manager Mark Wood said the barrier systems are specially designed for each location.

The fence rises eight feet above the water surface. "They're like big erector sets," Wood said.

More than 20 miles of barrier have already been installed at military facilities

around the world, and 15 more sites are planned over the next two years.



Over 20 miles of the barrier technology is already in use at military facilities, and 15 more locations are planned.

HOI will continue to modify and improve the barriers, which might include different pontoons or latching mechanisms.

HOI will share its findings with the Navy to enhance its port barrier system developments.

The license signing was held in Washington,

D.C., to add formality and visibility to the event.

"We wanted to make Washington, D.C., folks aware of the work and engineering that we're doing out here," said Buehler.



Inside the FLC

## Rehabilitation Lab Works With Industry, Govt., and the FLC

The **Rehabilitation Engineering Research Center on Technology Transfer** (T<sup>2</sup>RERC) is the nation's only program funded to bring new or improved assistive technology devices to the marketplace for the benefit of persons with disabilities and the elderly.

The T<sup>2</sup>RERC team at the State University of New York at Buffalo (SUNY) operates a business model within an academic environment, so it is researching the models, methods and metrics of the technology transfer process.

The SUNY facility is one of 22 RERCs, each focused on a different industry, population or application area. The RERC program's breadth of expertise includes disability and aging; mobility, hearing, vision and



*Using the Expanded Keyboard technology, the TI-83 is the only calculator accessible to children with mobility impairments.*

communication technologies; computer and information technology, mobile wireless communications and telecommunications; and universal design and workplace ergonomics.

T<sup>2</sup>RERC provides technical assistance to all RERCs on issues pertaining to technology transfer, while collaborating with diverse manufacturers in the private sector; universities through their technology transfer offices, and federal laboratories through the FLC. Its partners range from individual entrepreneurs to government agencies in other countries.

The T<sup>2</sup>RERC secured a third five-year cycle of funding from the National Institute on Disability and Rehabilitation Research (NIDRR) at the U.S. Department of Education to extend work through 2008.



*Using RERC innovation, Power Designers manufactures PowerCheq™. The "battery string equalizer" greatly extends the life, capacity, and range of power wheelchair batteries.*

In this cycle, the T<sup>2</sup>RERC is conducting the following four research projects that investigate innovative ways to facilitate and improve the process of technology transfer for all stakeholders.

1. *Identifying innovative technology transfer practices*—draws critical success factors from examples of retrospective and prospective transfer case studies in various sectors.

2. *Identifying innovative technology transfer policies*—traces the outputs and outcomes of all federal transfer programs supporting assistive technology-related projects and assesses their efficacy.

3. *Facilitating assistive technology industry innovation through focused market*  
*See T<sup>2</sup>RERC, page 6*

## FLC Hosts T<sup>2</sup> Panel on Assistive Technology

In response to the 8-point initiative on assistive technology announced in July 2003 by the Department of Commerce (DOC), the FLC hosted a four-part panel on technology transfer at the annual Assistive Technology Industry Association (ATIA) conference in Orlando, Fla., January 14-17, 2004.

FLC Washington, DC Representative **Dave Appler** moderated the panel; he has also been assisting the DOC with its 8-point initiative and works with several groups in the Interagency Committee on Disability Research.

FLC Chair **Ed Linsenmeyer** led off the panel with an overview of the FLC, the legislative history of technology transfer, and a description of the tools used in technology transfer.

Vaidy Vaidyanathan from the University of Central Florida described the university's

role and the techniques used by its research sector to promote and facilitate technology transfer innovations. He described several different methods of partnering with industry that enable them to leverage technology from the research community and share the cost of technology development.

Another event included Steve Bauer of the **Rehabilitation Engineering Research Center for Technology Transfer** (T<sup>2</sup>RERC) at the University of Buffalo speaking about the role of intermediary organizations in technology transfer.

The RERC works with all of these to help move new assistive technology to the consumer.

Many different stakeholders exist in technology transfer—from the researcher; to industrial firms that make, market, and

distribute new technology; to consumer and advocacy groups who both purchase the products and provide feedback on needs.

Their role is more than just that of a facilitator to technology transfer. They partner with manufacturers in several meaningful ways, including prototype development, consumer testing, market research, efficacy studies, etc.

The final speaker on the panel was Kevin Caves from Duke University, who discussed the process and lessons learned in successfully transferring a federal technology through a university research center to a commercial firm.

The collaboration with the lab through a CRADA has worked so well that they just renewed it for 3 more years. [FLC](#)

### DC on T<sup>2</sup>, From page 1

Overall, the numbers proposed for FY 2005 and the percentage of change from FY 2004 are:

- Agriculture, \$2.1B (-9%)
- Commerce, \$1.07B (-5%)
- Defense, \$69.85B (+7%)
- Energy, \$8.8B (+1%)
- EPA, \$577M (0%)
- HHS, \$29.38B (+4%)
- Homeland Security, \$1.2B (+15%)
- Interior, \$648M (-4%)
- NASA, \$11.31B (+4%)
- NSF, \$4.25B (+3%)
- Transportation, \$749M (+7%)
- Veterans Affairs, \$772M (-6%)

Obviously, a lot of things will change in the details of agency budgets as Congress reviews and modifies the president's request.

On other legislative fronts, several items on the calendar are of interest. Congress will try to finish the legislation that implements and funds proposed changes at the Patent and Trademark Office (PTO). The White House supports the proposal for PTO to keep all fees it collects, slated for a 15% increase in the

bill. But the Appropriation Committees strongly resist taking any revenue "off



budget." Reauthorization of the 6-year Transportation Equity Act for the 21<sup>st</sup> Century is back on the legislative calendar, but as I write this, there is talk about

delaying final passage until this summer. A recent proposal on this bill was offered to establish a fixed percentage for R&D at a level that would provide for an increase in funding. The passage of a comprehensive energy bill is starting to look like a lottery—long odds with great rewards.

Homeland security will continue to be a hot topic. Note: The first budget had no congressional earmarks, a feat many predict will never happen again.

With the national party conventions and a presidential election, Congress is looking at working a lot less days. That used to mean the appropriation bills would pass by October 1 or a little later and that other program-related legislation would pass before the election. In the case of the appropriation bills, I'm not sure that matters anymore.

The exceptions to that are the Defense and Homeland Security bills.

To learn more about technology transfer legislation and policy, write Dave at [dappler@flcdc.cnchost.com](mailto:dappler@flcdc.cnchost.com) or contact him at 703-414-5026.



*T<sup>2</sup>RERC, From page 5*

*research*—provides a context for transfer opportunities involving the assistive technology industry and for public policy decision making.

4. *Assessing the efficacy of transferred products*—determines the extent to which products previously transferred through the T<sup>2</sup>RERC impact the functional capabilities of consumers.

Concurrently, the T<sup>2</sup>RERC's four development projects seek to increase the number and quality of successful transfers from RERCs and other sources as follows:

1. *Transferring products through a supply push approach*—seeks and screens at the prototype stage promising technologies that offer superior functional capabilities to existing products.

2. *Transferring technologies through a demand pull approach*—seeks out and transfers critical technology solutions to needs identified through extensive market research.

3. *Improving the accessibility of new mainstream products*—extends participatory research to integrate the consumer's functional requirements into the design of new mainstream products.

4. *Facilitating RERC transfer activity through informatics*—establishes a pilot informatics infrastructure and assesses its utility for increasing communication, collaboration, and transfers.

The T<sup>2</sup>RERC has already transferred a wide range of technologies into product components and a variety of prototypes into the commercial marketplace.

Examples of successful transfers include Black and Decker's Lids Off jar opener, Turning Point's Expanded Keyboard, and Power Designers' Power Cheq™ battery string equalizer.

The Black and Decker Lids Off jar opener, <[www.growinglifestyle.com/prod/B00008GS9U.html](http://www.growinglifestyle.com/prod/B00008GS9U.html)>, is a trans-generational mainstream product addressing the needs of the elderly, persons functionally one-handed, and those with a range of physical disabilities. The Lids Off jar opener is operated with one hand and requires no hand strength. It works with most consumer bottle shapes, sizes and lids; has ergonomic controls and operation; is compact (folds up); and has good aesthetics (sleek, modern kitchen appliance). In the first three months on the market, more than a quarter million units had been sold.

The Turning Point Expanded Keyboard, <[www.turningpointtechnology.com](http://www.turningpointtechnology.com)>, is an accessory to the Texas Instrument TI-83 graphing calculator. The Expanded Keyboard draws on universal design standards, and the TI-83 easily docks and undocks. The Individuals with Disabilities Education Act states that assistive technology must be considered for each "Individualized Education Plan" for children in grades K-12. Texas Instruments is the market leader in graphing calculators for K-12 education. Each school district can meet the needs of disabled students by purchasing a small number of Expanded Keyboards. With this keyboard, the TI-83 becomes the only calculator accessible to children with mobility impairments – a critical product differentiation.

Power Designers, <[www.powerdesigners.com](http://www.powerdesigners.com)>, is a high-tech manufacturer of power management, charging and monitoring products for the electric vehicle industry.

Power Designers' PowerCheq battery string equalizer greatly extends the life, capacity, and range of power wheelchair batteries. When applied to power wheelchairs, outstanding benefits include

almost 300% increase in battery life; average range increased by more than 20% per full battery charge; less frequent battery replacements; easy retrofit onto power wheelchairs; and ability to add 12-V electronic accessories.

The T<sup>2</sup>RERC has enjoyed a variety of collaborations with the FLC over the past decade. It has conducted transfer projects with individual labs and the FLC locator service; cosponsored conferences and programs with FLC regions; disseminated materials through *FLC NewsLink*, the FLC web site, and NASA's *Tech Briefs*; drafted materials for FLC use; and participated in FLC policy and planning initiatives.

T<sup>2</sup>RERC's most visible collaborations involved demand-pull projects in the areas of wheeled mobility, hearing enhancement, speech enhancement and, most recently, vision enhancement.

Problem statements describing the high-priority technology needs of persons with low vision and blindness will be available online in mid-March.

The T<sup>2</sup>RERC expects to remain fully engaged with the FLC as it continues to practice and study the process of technology transfer, specifically to benefit the elderly and people with disabilities.

**More info:** Visit <<http://cosmos.buffalo.edu/t2rerc>>.

## Today at [www.federallabs.org](http://www.federallabs.org)



### Find a Laboratory

Use the FLC web site to find a federal laboratory in your region.



### Mark Your Calendar

See the *Upcoming Events* page to learn where and when T<sup>2</sup> events are taking place.



### T<sup>2</sup> Professional Development

Visit the *T<sup>2</sup> Education & Training* page to learn about the tools available to help government, industry, and academia sharpen their techniques.



### Technology Locator

Locate federal laboratories ready to transfer their technologies to the marketplace and find laboratories ready for collaborative R&D.

### FLC Laboratory Profile

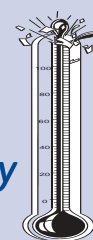
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