

# FLC NEWS LINK

June  
2006



T<sup>2</sup> F A C T

In 1963, Philips Electronics designed a new sound recording medium - the cassette tape. Philips patented the new technology in 1965 and made it available free of charge to manufacturers all over the world. Sony and other companies began designing new compact and portable tape recorders and players to take advantage of the cassette tape's smaller size. By 1995, total production of Sony's Walkman cassette players reached 150 million.

- Mary Bellis, *About.com*



T<sup>2</sup> E V E N T S

AUTM Central Region Meeting  
Minneapolis, Minn.  
July 23-25, 2006

Optics and Photonics  
San Diego, Calif.  
August 13-17, 2006

FLC Mid-Continent/Far West  
Regional Meeting  
Colorado Springs, Colo.  
August 19-21, 2006

NASVF 2006 Annual Conference  
Rochester, New York  
September 20-22, 2006

FLC Midwest/Southeast  
Regional Meeting  
Nashville, Tenn.  
October 25-27, 2006

## KCP DRILLS DOWN DRILLING COST

An advanced geophysical exploration system has the prospect of reducing U.S. dependence on foreign oil.

The newly developed Drill String Radar (DSR), engineered by Stolar Research Corporation as part of the National Nuclear Security Administration's Initiatives for Proliferation Prevention (IPP) program, effectively locates missed oil and gas reserves.

Partners in the project included the Kansas City Plant (which served as project facilitator, funding provider and technical partner) and the Measuring Systems Research Institute in Nizhny Novgorod, Russia.

IPP focuses on reducing the proliferation of weapons of mass destruction by redirecting the skills of former Soviet weapons engineers, technicians, scientists, and production workers to commercial, non-weapons product development and manufacturing.

DSR serves as an excellent IPP success story, and its technology has important implications. DSR equipment

*See KCP Drilling, page 4*

## NASA DEVELOPS REHAB TOOL

*by Nicole Quenelle, Fuentek, LLC*

Walter Reed Army Medical Center in Washington, D.C., has begun using the Secure Ambulation Mode (S.A.M.) physical therapy device to rehabilitate patients with spinal cord or traumatic brain injuries.

A product of Enduro Medical Technology (East Hartford, Conn.), S.A.M. is based on technology developed at NASA Goddard Space Flight Center (GSFC).

Enduro donated the S.A.M. unit to Walter Reed to facilitate rehabilitation for military patients, including soldiers returning home from service in Iraq.

"We felt S.A.M. would be an ideal fit for Walter Reed because it makes the rehabilitation process less taxing on both the patient and the medical staff," said Enduro's president Ken Messier.

According to Messier, S.A.M. allows patients to stand or walk—partially weight bearing, full weight bearing or non-weight bearing—whether they have a sense of balance or not. "It allows them to be up in a standing position without



*A product of Enduro Medical Technology, S.A.M. is based on technology developed at NASA Goddard Space Flight Center.*

having three or four therapists having to help them stand," explained Messier. "So it gets the patient up sooner in the rehab process without a fear of falling and without an injury to the patient or staff members."

At Walter Reed, the device is being used to help patients with a variety of traumatic injuries to the spinal cord and brain. According to Messier, one

*See NASA Rehab Tech, page 4*

## DC ON T<sup>2</sup>: ASSISTIVE TECH

*by Gary Jones, FLC Washington, DC Representative*



Greetings from DC. Several events I recently attended drive the topic for this column.

In January, I attended the Assistive Technology Industry Association's (ATIA) annual conference, and had the opportunity to engage many individuals involved in developing and utilizing assistive technologies.

In March, I presented a brief organizational overview at a quarterly meeting of the federal government's Inter-agency Committee on Disability Research (ICDR), and in April the FLC Chair and I participated in a meeting hosted by the De-

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



T<sup>2</sup> I N S I D E



PNNL  
Biomarkers



FLC Election  
Results

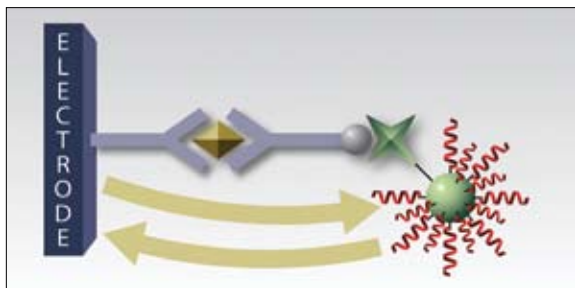


T<sup>2</sup>: Theory  
to Practice

Tech Classifieds, Page 7

# FED LABS FLASH | TECHNOLOGY TRANSFER NOTES

## PNNL BIOMARKERS



An accurate, economical and quick way to detect biological markers that can signal the onset of serious medical conditions has been developed by researchers at Pacific Northwest National Laboratory (PNNL).

PNNL researchers have discovered the basis for a new method aimed at the tumor necrosis factor alpha, a biomarker for many problems, including HIV infection, graft rejection and rheumatoid arthritis.

First, a sample of body fluid is mixed with a label consisting of polyguanine attached to silica nanoparticles. The label attaches itself to the tumor necrosis factor alpha in the sample.

Then, the labeled factor binds with the antibodies on the outer layer of the sensor's carbon nanotubes.

The current produced when the sensor is immersed in a special solution is proportional to the number of polyguanine labels nearby, which in turn depends on the amount of necrosis factor in the sample.

Through the use of these nanoparticle labels, the sensor provides ultrasensitive measurements of the amount of biomarker present.

## ARGONNE'S WAGH NAMED INVENTOR OF THE YEAR

The Intellectual Property Law Association of Chicago (IPLAC) has named Arun Wagh of the Department of Energy's Argonne National Laboratory (ANL) Inventor of the Year.

Wagh, of ANL's Energy Technology Division, was recognized for his work in the field of material sciences, including phosphate ceramics and concrete structures. This work has led to the development of a new material called Grancrete®, a tough reinforcement-free ceramic material that is almost twice as strong as concrete and that may be the key to providing high-quality, low-cost housing throughout developing nations.

One of Wagh's advancements permits the use of these materials in low-cost, energy-saving, reduced-pollution housing. Houses can be built using Grancrete® by

spraying it onto a rudimentary frame. Grancrete® dries to form a lightweight but durable surface.

The resulting structure is a major upgrade to the fragile structures in which millions of the world's poorest currently live.

These types of materials could be readily adapted to provide temporary and permanent housing in disaster areas, and have been suggested for use in regions affected by the tsunami disaster in 2004 and last year's hurricanes along the Gulf Coast.

Experiments have shown that Grancrete® is stronger than concrete, is fire-resistant, and can withstand tropical and subfreezing temperatures. It has the ability to set quickly in a much greater range of temperatures than concrete.

Grancrete® is based on a material called Ceramicrete®, which was developed by Wagh at ANL in 1996 to encase nuclear waste.

The versatile Ceramicrete® has many different applications, ranging from treatment of hazardous waste to the creation of a variety of consumer products such as construction materials, structural materials requiring high compressive strength, sealants and coatings. Ceramicrete® also has dental and medical applications.

Wagh holds more than 14 U.S. patents and has additional pending applications on which he is a named inventor.

Wagh holds a B.S. in Physics from Bombay University in India, an M.A. in Physics from Temple University in Philadelphia, and a Ph.D. in Physics from The State University of New York, Buffalo. He has worked at ANL since 1990.

## McFARLANE NAMED DIRECTOR AT IDAHO LAB

Harold McFarlane, director of Space Nuclear Systems and Technology Division at Idaho National Laboratory (INL), will begin his tenure as president of the American Nuclear Society (ANS) in June.

While maintaining his duties at INL, McFarlane will lead the 10,000-member international organization of engineers, scientists and educators for the next year.

McFarlane has been at the INL for more than 30 years.

In addition to his position as Space Nuclear Systems and Technology Division director, he is deputy associate laboratory director for nuclear programs.

As the president of ANS, McFarlane will head the organization in unifying professional activities within the

diverse fields of nuclear science and technology. He has served the past year as ANS vice president.

"The ANS is administered by a professional staff headquartered in LaGrange Park, Illinois.

However, much of the technical work is accomplished by volunteers who organize meetings, develop nuclear standards, conduct peer reviews, etc.

The board of directors sets policy and develops strategies for the society," said McFarlane.

"But the president has the best job," he added. "He is the face of the society to many organizations – giving him the opportunity to meet fascinating people from around the globe while spreading the nuclear message. He also, has the pleasure of presiding at many happy occasions such as bestowing honors and awards."

The ANS is a not-for-profit, international scientific and educational organization with a multifarious membership composed of approximately 10,500 engineers, scientists, administrators, students and educators.

## FLC NEWSLINK

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# TECH WATCH | LABORATORY TECHS READY FOR TRANSFER

## LANL FUEL CELL

Los Alamos National Laboratory (LANL) scientists have created a novel and efficient direct methanol fuel cell (DMFC) stack. This new stack has a circular footprint, within which are a cathode and anode manifold, tie-bolt penetrations, and tie-bolts.

Each fuel cell uses two graphite-based plates. One plate includes a cathode active area that is defined by serpentine channels connecting the inlet and outlet cathode manifold.

The other plate includes an anode active area defined by serpentine channels connecting the inlet and outlet of the anode manifold, where the serpentine channels of the anode are orthogonal to the serpentine channels of the cathode. The fuel cell active region is located between the two plates.

### Application(s)

- Portable electronics
- Electric scooters
- Battery chargers
- Wearable power packs.

### Advantages

- Increased power density.
- Reduced fuel cell footprint.
- Reduced fuel cell stack volume.
- Increased fuel cell and stack power output.

### IP Status

Available for nonexclusive licensing.

*More info:* Laura Barber, Technology Transfer Division, 505-667-9266, ljbb@lanl.gov

## NIH READY TO TRANSFER INFLUENZA VACCINE

The Food and Drug Administration (FDA) and the National Institutes of Health are pleased to announce that a single vector DNA vaccine against influenza is available for licensing.

The single vector expresses both hemagglutinin (HA) and matrix (M) proteins, generating both humoral and cellular immune responses.

The vaccine candidate completely protected mice against homologous virus challenge and significantly improved survival against heterologous virus challenge. A robust and reliable vaccine supply is widely recognized as critical for seasonal or pandemic influenza preparedness. The advantages offered by this vaccine make it an excellent candidate for further development.

### Advantages

1) DNA vaccines are easy to produce and store; 2) Vaccine candidate improved survival against heterologous

virus challenge; 3) No risk of reversion to pathogenic strain as with live-attenuated virus vaccines; 4) Can be administered to immuno-compromised individuals, increasing potential market size; 5) HA and M proteins encoded by single vector, ensuring uniform delivery of immunogen; 6) More efficient to boost synergistic effects on both HA and M specific immune responses than a mixture of individual plasmids; 7) M protein not subject to antigenic drift, which allows advanced manufacturing and overcomes the need for strain monitoring; 8) DNA vaccines elicit cellular immune response, which is essential for efficient virus clearance.

The FDA is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate, or commercialize this technology.

*More info:* Zhiping Ye, 301-435-5197, or Beatrice Droke, 301-827-7008



## FLC TECHNOLOGY LOCATOR

*Personalized 1:1 Assistance!*

*Need assistance locating information on federal technologies, federal laboratory expertise, or collaboration possibilities?*

*Contact the FLC Technology Locator,  
Frank Koos, at 856-667-7727*

## IDAHO LAB DEVELOPS NOVEL GAS FLOW METER

Mass flow meters are the most prevalent method used to accurately measure flow rate. However, mass flow meters must be calibrated separately for each gas or gas mixture in order to be useful.

Idaho National Laboratory has developed a novel gas flow meter that measures the flow rate of mixed gases, pure gases, and gas systems.

The device has been tested to give accurate values for flow rates as low as 5 mL/min. This invention is capable of accurately measuring the flow rate of any gas or gas mixture without calibration.

This is especially useful in situations where the composition of the flowing gas changes over time. Devices can be manufactured for a number of different flow rates—from very low to very high flow rates.

*More info:* Jason Stolworthy, 208-526-5976



### FLC MIDWEST/SOUTHEAST JOINT REGIONAL CONFERENCE




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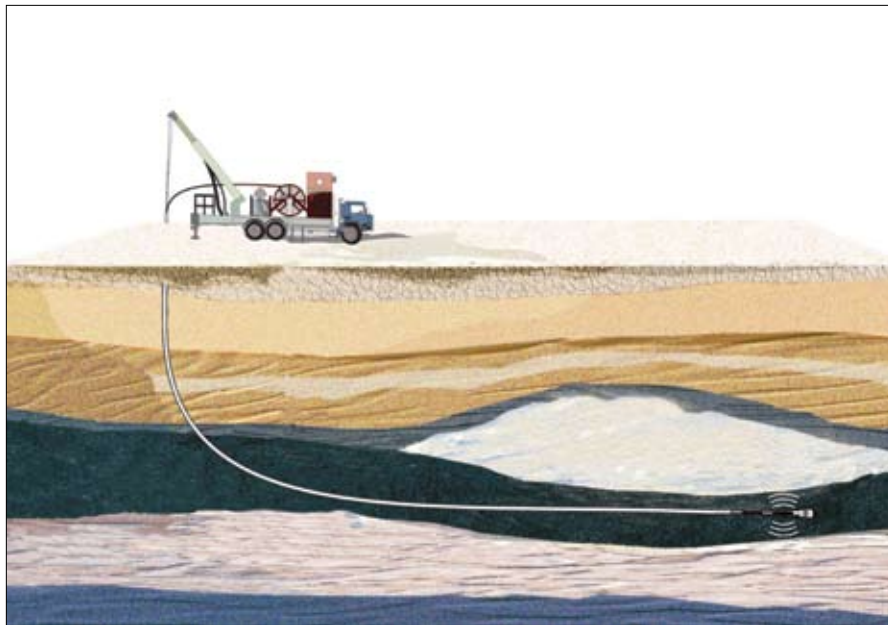
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[www.southeastflc.org](http://www.southeastflc.org)

## KCP Drilling, from page 1



The Drill String Radar (DSR) technology recently received the prestigious 2005 R&D 100 Award. Part of the NNSA's Initiative for Proliferation Program, the DSR project received funding, technical support and facilitation from NNSA's Kansas City Plant.

is integrated into the coal bed drill string immediately behind the drill bit. Its specialized radar measures the electrical properties of the surrounding material, and identifies nearby structures and geologic layering, helping to detect, navigate and map unknown strata.

This capability makes DSR a necessary tool for advanced drilling and mapping of coal bed methane or natural gas drill holes.

DSR's economic benefits are only beginning to come into focus. Accurate horizontal drilling allows for drilling in a critically optimal zone at a lower cost than employing real-time drilling techniques in which the borehole repeatedly wanders out of the strata.

Thus, DSR yields two important economic benefits—reduced drilling costs

and more efficient strata production.

Furthermore, in addition to maximizing the overall production level, the strata production rate could also increase.

These increases would yield substantial economic benefits to not only the producing company, but also the U.S. economy.

#### Future Benefits

The DSR project recently received \$1.4 million to develop related technology, including acoustic intensification for coal bed degassing.

Draining methane gas decreases chances of explosions, increasing miners' safety. As an added benefit, the drained methane gas could become a resource to sell.

While some coal mines cannot be mined for coal, with DSR technology these mines could still be degassed and the captured methane gas sold at market.

## NASA Rehab Tech, from page 1

active military patient who was wheelchair-bound for two years due to a thoracic spinal cord injury is now up and walking with S.A.M. "When we first put him in the walker, he was up and going for 25 minutes," explained Messier. "He's now walking for up to 25 minutes every day and even using S.A.M. to perform exercises to strengthen his leg muscles." Other previously wheelchair-bound patients are using S.A.M. in similar fashion, Messier said.

Developed at GSFC, the patented technology behind S.A.M. includes an earlier model walker device and a cable-compliant joint mechanism. Unlike a fixed joint, which can move in only one or two directions, NASA's compliant joint allows subtle movement in six directions with variable degrees of stiffness. Enduro licensed both patents from NASA and added the joint mechanism to the walker's harness, enabling greater flexibility in the walker's use and

creating a commercially viable product. The licensing was facilitated by GSFC's Office of Technology Transfer, a goal of which is to transfer technologies developed for the space program to other industries for broader use.

The donation of S.A.M. to Walter Reed was made possible with support from The Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF). HJF is a nonprofit organization that provides a resource link between military medicine organizations and private industry. "I commend Enduro for donating its medical devices to help with rehabilitation efforts at Walter Reed," said HJF president John Lowe. "We're very glad to be able to facilitate this collaboration, which provides additional resources for the treatment of our military personnel."

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# FLC ELECTS NEW BOARD MEMBERS, REGIONAL LEADERSHIP

From May 2-4, 2006, the FLC voting members conducted elections for the positions of Finance Officer, Recording Secretary, Member-at-Large (full term), Member-at-Large (unexpired one-year term); and for the Regional Coordinator and Deputy Regional Coordinator positions in the Far West, Mid-Atlantic, and Midwest regions.

Below is a list of the elected officials, their positions, and their laboratory affiliations. The officers began their terms June 3, 2006.

## National Results

- **Finance Officer:** Beth Thomas  
National Institute of Standards and Technology
- **Recording Secretary:** Nancy Moore  
Pacific Northwest National Laboratory

- **Member-at-Large (Full Term):** Laurie Arrants  
Nat. Institute of Neurological Disorders and Stroke
- **Member-at-Large (Full Term):** Richard Brenner, Ph.D.  
Agricultural Research Service
- **Member-at-Large (Full Term):** Dr. J. Scott Deiter  
Naval Surface Warfare Center
- **Member-at-Large (Unexpired One-Year Term):**  
Mary Archuleta  
Air Force Research Laboratory-Phillips Site

## Regional Results

- **Far West Regional Coordinator:** Steve Lieberman  
Space and Naval Warfare Systems Center, San Diego
- **Far West Deputy Regional Coordinator:** Ida Shum  
Idaho National Laboratory

See *FLC Elections*, page 8



*FLC Chair Ed Linsenmeyer announces the results of the 2006 FLC elections in Minneapolis during the FLC/TPWG national meeting.*

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

partment of Education's National Institute for Disability and Rehabilitation Research (NIDRR), where the focus was on NIDRR-sponsored rehabilitation engineering research efforts.

While these groups differ in perspective, each is focused on a similar goal – developing assistive technologies (AT) for individuals with disabilities. The ATIA is an “organization of manufacturers, sellers or providers of technology-based assistive devices and/or services” ([www.atia.org](http://www.atia.org)); the ICDR is charged with promoting “coordination and cooperation among Federal departments and agencies conducting rehabilitation research programs” ([www.icdr.us](http://www.icdr.us)); and NIDRR, agency home for the ICDR, funds considerable research and development efforts in a variety of AT areas ([www.ed.gov/about/offices/list/osers/nidrr/index.html](http://www.ed.gov/about/offices/list/osers/nidrr/index.html)).

There is a reason we participated in these events. The FLC has an initiative to support the AT community (see the FLC web page).

Our participation at these events reflects our continuing commitment to that end. Given that, I thought this would be a good time to revisit this initiative to remind our constituents of our responsibilities and how the FLC might work to meet that goal.

Accordingly, in this column I provide a general “refresher” on the FLC's AT initiative (i.e., the driving legislation, lead

agency responsibilities for AT efforts, and the potential role for the FLC), with the intent of reinvigorating our ongoing efforts in this area.

### *FLC AT Legislative Drivers*

The FLC initiative derives in part from congressional language stating that the FLC shall, “work with (NIDRR) to compile a compendium of current and projected Federal laboratory technologies and projects that have or will have an intended or recognized impact on the available range of assistive technology for individuals with disabilities ...” Further, NIDRR has similar legislative language strongly supporting a “collaborative” relationship with the FLC, “to promote technology transfer that will further development of assistive technology and products ...” While the original language is specific, it has been generally understood to encourage the federal labs to support AT development through tech transfer. (The complete statutory language can be found in the FLC “Green Book” under 15 USC 3710(e) (1) (K) and 29 USC 3032).

### *Role of DoEd and NIDRR*

Although many agencies engage in related research efforts, the agency with lead responsibility for coordinating disability-related activities is the Department of Education's (DoEd) Office of Special Education and Rehabilitative Services (OSERS).

OSERS' mission is “to provide leadership to achieve full integration and participation in society of people with disabilities ... (including supporting) ... research to improve the lives of individuals with disabilities.”

NIDRR resides within OSERS and has the responsibility to provide “leadership and support for a comprehensive program of research related to the rehabilitation of individuals with disabilities...” In turn, NIDRR hosts the ICDR, and funds research at numerous Rehabilitation Engineering and Research Centers (RERCs) nationwide.

### *RERC*

Over 20 funded RERCs, most of which are university-based, each focus on some unique aspect of identified AT need. Some of these needs addressed by the RERCs include communication enhancement, telecommunications access, prosthetics and orthotics, enhanced mobility for those with spinal cord injuries, hearing enhancement, and wheeled mobility.

A complete list of RERCs and their research areas can be found at the National Center for Dissemination of Disability Research web page, ([www.ncddr.org](http://www.ncddr.org)).

### *The FLC and the AT Initiative*

The AT community is broad, and its technology needs are varied. The FLC has a responsibility to help them meet those needs through federal technology

transfer efforts. It is our hope to continue the good work already underway.

Accordingly, we have taken several actions aimed at furthering this ongoing effort.

These include making our presence known to potential industry partners with technical needs that our labs can help fill (i.e., ATIA membership), further integrating into the intergovernmental coordination for AT research (i.e., participation on the ICDR), and reaching out to certain government-sponsored research communities to highlight federal technology capabilities that may fill gaps in their development efforts (i.e., working with the RERCs to identify needs and match them with federal technical capabilities).

Bringing the federal labs' vast technical capabilities to bear on the needs of the AT community is admirable; however, attending meetings and conferences doesn't transfer technology. This is only a small step toward meeting our mandate. I encourage FLC members to revisit the sites noted above and become reacquainted with their work.

We will continue to look for ways to identify and match needs and capabilities, with the end result being greater quality of life for those truly in need of these technologies.

*Gary can be reached at [gkjones@fldc.cnchost.com](mailto:gkjones@fldc.cnchost.com).*

# TURNING COMMERCIALIZATION THEORY INTO PRACTICE

by Marjorie Mascheroni, Dawn Hommer, and Randy Carmical



From left: LANL tech transfer staff Erica Sullivan and Shandra Clow join SDSU professor Alex DeNoble and several of his graduate MBA students (right) to review student projects.

For more than a decade, Los Alamos National Laboratory's (LANL) Technology Transfer (TT) Division has fostered innovative student programs. LANL set a standard that other national laboratories are now following by establishing a

summer MBA internship program that provides traditional MBA students with a unique experience while helping LANL evaluate and market its intellectual property assets. Building on the success of its summer program, in 2005 Los Alamos

decided to expand this rich opportunity to learn about technology commercialization to the classroom. The laboratory established partnerships with both San Diego State University (SDSU) and New Mexico State University (NMSU), giving students at both universities a chance to use LANL innovations as the basis for applying commercialization and entrepreneurial theory to real projects—projects that may help bring cutting-edge technologies to the marketplace.

SDSU developed a course in response to LANL's request for graduate students to evaluate the commercialization potential of various technologies in the early development stage. "This is a unique and innovative experience in which students learn about the commercialization of new technologies in a very hands-on way,"

said SDSU management professor Alex DeNoble. "It is one of several inventive courses being developed in our entrepreneurial track through the college's Management Department and Entrepreneurial Management Center (EMC)."

The alliance between the EMC and LANL gives students the opportunity to learn about the technology commercialization process through direct interactions with leading-edge scientists and technologists. "What these MBA students are learning is important in today's market," said Erica Sullivan, a LANL business development executive who worked with the TT Division while an MBA student at SDSU. "The world economy is becoming more and more technology-based, and students need to possess both business

*See Commercialization Theory, page 8*

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# LAB CLASSIFIEDS | AVAILABLE TECHNOLOGIES, FACILITIES, AND PARTNERS

## NIH T-CELL

Renal cell carcinoma (RCC) is the most common renal tumor, with approximately 30,000 cases per year in the U.S. The survival rate for this cancer is very low—only 10% of patients survive because this carcinoma is resistant to most chemotherapies.

A T-cell receptor that was cloned from a human immune cell by researchers at the National Institutes of Health (NIH) has the ability to recognize a number of human kidney tumors. The cells were able to kill kidney cancer cells in patients and, when introduced into other human immune cells, these cells also acquired the ability to kill kidney cancer cells.

*More info:* Michelle A. Booden, Ph.D., 301-451-7337, boodenm@mail.nih.gov

## ARS ENERGY

Agricultural Research Service (ARS) scientists have designed a device that can be used for recovering ethanol or other water-soluble organic products resulting from the fermentation process. ARS's invention (a spiral-wound supported liquid membrane module) is a low-energy chemical separation device that combines the processes of extraction and pervaporation in a single piece of equipment, an advantage over existing devices. This technology allows for continuous removal of ethanol from a fermentor, which can increase both fermentor productivity and product yield, thereby reducing production costs.

*More info:* Richard D. Offeman, 510-559-6458, roffeman@pw.usda.gov

## BERKELEY'S FLEXIBONE

Carolyn Bertozzi and colleagues at Lawrence Berkeley National Laboratory (LBNL) have developed a rapid and inexpensive method to incorporate high mineral content into a polymer scaffold to create lightweight composite materials with a wide range of applications.

The technique can be used to incorporate ceramics, metals, or semiconductors into hydrogels.

These Flexibone composites will be useful in a variety of biological and nonbiological applications that require a flexible polymer as well as the ability to tune strength and electronic, magnetic, conducting, and insulating properties.

Applications include bone implants, dental implants, bio-cements, and flexible composites with magnetic and electrical properties.

*More info:* 510-486-6467 or TTD@lbl.gov

## SRL'S RADROPE™

Researchers at Savannah River National Laboratory (SRL) have developed a lightweight, portable system that rapidly detects the presence of nuclear materials in sealed containers without using harmful x-rays.

The RadRope system can be used in a straight line, a curved line, or at an angle, and the length of the system can be easily customized for a variety of different uses.

*More info:* Dale K. Haas, Savannah River National Laboratory, Westinghouse Savannah River Company, 803-725-4185, dale.haas@srnl.doe.gov

## LBNL'S ERGONOMIC ARM

The Berkeley Ergonomic Arm of Lawrence Berkeley National Laboratory (LBNL) is a practical ergonomic intervention and support system to improve productivity and reduce workplace ergonomic-related injuries.

The Berkeley Ergonomic Arm dynamically enhances musculoskeletal support and comfort during sitting tasks at the computer or standing at a benchtop or manufacturing station. The aim is to reduce the likelihood of cumulative trauma injuries to the upper extremities.

This is a ground-floor opportunity with enormous upside market growth potential. LBNL is seeking a qualified partner(s) to work in a Phase III collaborative effort to refine and commercialize the new Berkeley Ergonomic Arm.

*More info:* Chris Kniel, Technology Transfer Department, crkniel@lbl.gov, 510-486-5566

## NREL COOKS UP TECH

Inventors Steven D. Burch, David K. Benson, and Thomas F. Potter of the National Renewable Energy Laboratory (NREL) have developed a cooking utensil with improved heat retention that includes an inner pot received within an outer pot and separated in a closely spaced-apart relationship to form a volume or chamber between.

The chamber is evacuated and sealed with foil leaves at the upper edges of the inner and outer pots.

The vacuum created between the inner and outer pots, along with the minimum of thermal contact between the inner and outer pots, and the reduced radiative heat transfer due to low emissivity coatings on the inner and outer pots, provide for a highly insulated cooking utensil.

Interested organizations may consider developing and/or commercializing this technology through a license agreement, CRADA, or Work for Others agreement.

*More info:* Richard Bolin, 303-275-3028

## ARS GENOMICS

Agricultural Research Service researchers have developed a computer tool to help research scientists visualize relationships between and among data.

The technology uses existing relational databases and provides a means to selectively visualize data clusters to reveal degrees of relatedness between the clusters based on their assigned attributes. Rather than develop singular questions to query a relational database, the display produces a global view of data sets.

This tool will help biotechnology companies view data relating to gene expression in a different way, and may provide another approach toward gene mining.

*More info:* Gerard R. Lazo, 510-559-5640, lazo@pw.usda.gov

## LIVERMORE SEEKS PARTNER FOR COMMUNICATION

Lawrence Livermore National Laboratory (LLNL), operated by the University of California under contract with the Department of Energy (DOE), is seeking one or more industrial partners to help further develop LLNL's ultra wide band (UWB) radar communication systems for military and government applications.

This UWB transceiver provides through-the-wall communications capability in heavy metallic and heavy concrete indoor channels.

LLNL researchers have invented and developed a state-of-the-art UWB communications system based on the transmitted reference technique.

LLNL is seeking industrial partners with a demonstrated ability to develop and mature early-stage technology for military and government use.

*More info:* [http://www-eng.llnl.gov/uwb\\_comm/uwb\\_comm.html](http://www-eng.llnl.gov/uwb_comm/uwb_comm.html)

*Commercialization Theory, from page 6*

and technical skills." Working closely with the LANL team, students evaluated the market potential of new, cutting-edge, early-stage technologies in the areas of nanotechnology, solar cell technology, optical lasers, cooling technologies for integrated circuits, and software for protecting sensitive data. At the end of the course, the teams delivered a comprehensive presentation of their findings to LANL staff. The report assesses the market potential, risks, barriers, and trends for each technology and the intended application within those segments. Students work on each project with mentors experienced in commercialization.

"It's a tremendous bridge to the real world from school and helps forge both effective skills and attitudes through directed experience," said mentor William Paulin, founding principal of Paulin Neal Associates.

Current MBA student Vincent Crowley recently received an internship with LANL through his work on the project. "This is the hardest, most beneficial class I've ever taken," Crowley said. "You ask yourself 'Does the class add something we can take away when we're done?' This one does. The work we do here helps us market ourselves to prospective employers."

In January 2005, approximately 25 graduate students with NMSU's Arrowhead Center, Inc. (AHC) were enlisted to complete 13 technology-based projects. A software application developed to perform

structural health monitoring (SHM) of various structures for safety and preventative maintenance was among these projects.

Students conducted research to determine what methods the structural health monitoring industry was using to predict the type of competitive environment in which the SHM would be operating.

They were also asked to suggest commercialization strategies with the greatest potential. NMSU students also explored the market environment and commercialization strategies for electronic applications of single-wall carbon nanotubes.

According to AHC director Kevin Boberg, "The learning experiences the laboratory has given AHC are inimitable to any other we have had. The students have not only learned what steps are needed to commercialize a technology, but also how to understand a technology that was foreign to them when the project started and still relate business strategies to that technology."

Students had the opportunity to find new applications for the technologies presented to them and were encouraged to explore and suggest any ideas they had during the research process.

They had to think out of the box throughout the whole process, helping them to become skilled at expanding their research when an unforeseen business opportunity presents itself.

*FLC Elections, from page 5*

- Mid-Atlantic Regional Coordinator:  
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NASA
- Mid-Atlantic Deputy Regional Coordinator:  
Lorraine Flanders  
Naval Surface Warfare Center
- Midwest Regional Coordinator:  
Cynthia Wesolowski  
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