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T² FACT

While testing 3M's Wetordry brand sandpaper at a body shop in 1925, 3M engineer Richard Drew noticed that auto painters were struggling to make clean lines when painting. As a result, Drew invented Masking tape. While testing the new tape, the user exclaimed, "Take this tape back to those Scotch bosses of yours and tell them to put more adhesive on it!" From that point on the name Scotch was applied to the entire line of 3m tapes.

-Mary Ellis, About.com



T² EVENTS

World's Best
Technologies 2005
Arlington, Texas
March 28-30, 2005

2nd Annual Global
Bioexecutive Program
Module 1:
Capitalizing Innovation
Berkeley, Calif.
April 7-8, 2005

2005
Society of Automotive
Engineers Conference
Detroit, Mich.
April 11-14, 2005

FLC National Meeting
Mission Driven Partnerships
Orlando, Fla.
May 1-6, 2005

NSTI Nanotech Conference
and Trade Show
Anaheim, Calif.
May 8-12, 2005

2005 Technology Transfer
Society Meetings
Kansas City, Mo.
Sept. 28-30, 2005

NIST IMPROVES HEART ATTACK TREATMENT

Each year, according to the National Heart, Lung and Blood Institute, more than a million people in the U.S. suffer a heart attack. About half of heart attack victims die, many within 1 hour of the onset of symptoms.

Confirming that the incident was indeed a cardiac arrest goes a long way toward preventing the attack from being fatal.

Thanks to clinical measurement standards recently issued by the National Institute of Standards and Technology (NIST), diagnosing heart attacks has become a more precise science.

NIST's new Standard Reference Material for human cardiac troponin complex (SRM 2921) is helping manufacturers to improve assays that measure concentrations of an important indicator protein in blood samples of suspected heart attack victims.

Troponin I is released from dying heart muscle cells deprived of blood flow during a heart attack. Previously, however, results of clinical tests to determine troponin I levels varied by as much as fifty-fold on the same sample. This variability led to considerable uncertainty, complicating diagnoses.

SRM 2921 is expected to help reduce variations in clinical test results to just twofold. "It's a big first step toward getting the system under control," said Michael Welch, leader of the NIST development team.

Troponin I is notoriously difficult to measure. The protein can exist in low concentrations and in different chemical forms.

The SRM is a solution containing certified concentrations of three related proteins, including cardiac troponin I, purified from human heart tissue

See *NIST Heart Attack Help*, page 4



NIST's new SRM 2921 assists physicians with interpreting results from medical institutions using different test methods. This ability helps measure concentrations of an indicator protein in suspected heart attack victims.

ENERGY TOPS EPA'S TO-DO LIST

by Neil MacDonald
Federal Technology Watch

Formation of an EPA-State Energy Efficiency and Renewable Energy (EERE) initiative was announced Feb. 16 by the Environmental Protection Agency (EPA) and the National Association of Regulatory Utility Commissioners (NARUC).

EPA and utility regulators from Ark., Conn., D.C., Hawaii, Minn., and N.M. will conduct projects to explore approaches for reducing the cost of consumer electric and gas bills through cost-effective energy efficiency, renewable energy, and clean distributed generation.

Based on some recent studies, EPA estimates that if all states were to implement cost-effective energy efficiency and clean energy policies, the projected growth in demand for

See *Energy Tops EPA's List*, page 5

THE FLC LOSES A GREAT FRIEND

Joan Miller, a long-time supporter of the FLC and hard-working member of the FLC Education and Training (E&T) Committee, whose dedicated commitment to the professional development of technology transfer practitioners was instrumental in strengthening and expanding the FLC's education and training activities, died on February 10, 2005, at her home in Salt Lake City, Utah, after a long and valiant struggle with cancer. She was 63.

Joan worked closely with Lynn Murray, FLC E&T Committee Chair, and members of the Committee, helping to provide "direction and substance" to the E&T



Joan Miller, 1941-2005

Committee's efforts. She was instrumental in revitalizing the E&T Committee newsletter, *EduLink*, which was later incorporated into *FLC NewsLink*, disseminated highly regarded articles, many written by Joan, on education and training in technology management and technology transfer. She continued to write articles on T2 education and training for *FLC NewsLink*.

Joan was closely involved with all of the FLC's training activities. She worked with the FLC Management Support Office (MSO) to develop the *FLC Technology Transfer Desk Reference*, a guide to technology transfer and textbook for

See *FLC Loses a Friend*, page 5

SEEING PROTEIN STRUCTURES MORE CLEARLY

Have you ever watched a television show with poor reception?

The fuzzy picture on the screen often makes it difficult to discern the characters and the action, making for a frustrating evening at home.

In proteomics, SOLVE/RESOLVE software helps researchers get clear pictures of protein structures, allowing them to develop new pharmaceuticals and to understand how proteins work.

When Los Alamos National Laboratory (LANL) computational bioscientist Dr. Tom Terwilliger developed SOLVE/RESOLVE, he knew he was onto something good, but had no idea his software was destined to become

LANL's greatest licensing success!

The application, which allows scientists to create 3-D images of protein molecules, is in high demand in the biotech and health-care fields because of the importance of these models in the design of new drugs and the engineering of new enzymes. Licenses granted for SOLVE include more than 40 government-use licenses, 375 non-

The blue, green, and red ribbons are a schematic representation of a protein called initiation factor 5 A. RESOLVE automatically built a detailed atomic model of the protein, beginning from a fuzzy image of the protein.



commercial licenses to educational and non-profit institutions worldwide, and 25 commercial licenses for use in the

biotech and pharmaceutical fields. SOLVE has generated more than \$1.2 million in royalty income for

See *Seeing Protein*, page 4

NAVY, INDUSTRY CREATE DISASTER RELIEF DEVICE

by Dan Broadstreet, NSWC PC Public Affairs



U.S. Marines test prototypes of the MIOX purifier—a miniaturized water purification system—during a limited military utility assessment (LMUA) sponsored by the Air Force Medical Evaluation Support Activity.

The year 2004 closed with historical records of natural disasters ranging from earthquakes and hurricanes to tsunamis and the nuisance of ter-

rorism, but Navy, Department of Defense, and industry researchers have provided innovative relief for 2005 with the advent of concentrated water purification in miniature form.

According to Defense Advanced Research Projects Agency's (DARPA) Special Assistant Operational Liaison U.S. Air Force Col. Jose Negrón, DARPA and its original developers are joining forces to send a total of 1,200 of the miniaturized water purifiers to recent tsunami victims.

"Cascade Design, Inc. (CDI) and MIOX Corporation are donating 1000 water purification pens to the cause and I am adding 200 for a total of 1,200," Negrón reported.

DARPA, the Navy's Naval Surface Warfare Center Panama City (NSWC PC), Department of Defense's Office of Technology Transition, and commercial industry have joined the United States' elite forces to produce and field a miniaturized water purification system that destroys biological and

See *Navy's Disaster Relief*, page 4

FED LABS FLASH | TECHNOLOGY TRANSFER NOTES

LANL, CHEVRONTEXACO ESTABLISH ALLIANCE FOR ADVANCED ENERGY

On November 10, 2004, Los Alamos National Laboratory (LANL) deputy director, Don Cobb, acting on behalf of director G. Peter Nanos, and Donald Paul, vice president and chief technology officer at ChevronTexaco signed an agreement establishing the Alliance for Advanced Energy Solutions at LANL.

ChevronTexaco and Los Alamos will develop energy industry solutions derived from Department of Energy and Department of Defense technologies. The initial focus will be on advanced well systems solutions. Future opportunities in broader energy industry solutions will be evaluated.

NEW MATERIALS PROVIDE INSIGHT INTO RADIOACTIVITY IN THE ENVIRONMENT

A new class of materials that could enhance basic understanding of how radioactive materials behave in the environment has been discovered by researchers from the University of Notre Dame and Argonne National Laboratory (ANL). Called actinyl peroxide compounds, these materials self-assemble into nano-sized hollow cages that could have useful new electronic, magnetic and structural properties important to the emerging world of nanotechnology.

The new materials are precipitated from uranium and neptunium peroxide solutions at room temperature. They consist of groups of 24, 28 or 32 identical polyhedra that are linked into clusters measuring about two nanometers – billionths of a meter – in diameter.

Researchers discovered the materials during the course of their work at the Environment Molecular Science Institute. ANL and Notre Dame are partnering to explore the basic science of molecular interactions involved in the transport of nuclear materials in the environment.

PARTNERSHIP TO ADVANCE CRYOGENIC MOTORS

by Nancy Pekar, NASA Goddard Space Flight Center



In April 2004, an innovative, patent-pending ceramic motor developed by New Scale Technologies of Victor, New York, piqued the interest of researchers at NASA Goddard

Space Flight Center in Greenbelt, Maryland.

Now the two organizations have signed an agreement to conduct joint research to benefit NASA as well as commercial applications.

New Scale's tiny SQUIGGLE™ motor is an ultrasonic piezoelectric actuator that uses vibrations in a threaded bushing to directly rotate a mating screw. Nanometer resolution over many millimeters of travel has been demonstrated at temperatures ranging from room temperature to 100 Kelvin. However, to be used in aerospace and some commercial applications, operations at lower cryogenic temperatures must be proven.

The partnership between New Scale and NASA Goddard is a natural fit, explained Dr. Peter Shirron, a senior researcher in the Cryogenics and Fluids Group at NASA Goddard. "Not only does NASA have extensive cryogenic testing capabilities and experience, but we also need cold-qualified actuators for future space telescope missions." NASA's cryogenic instruments require millimeters of stroke, nanometer precision, and several Newtons of force while generating negligible vibration and heating. New Scale's SQUIGGLE™ motor might meet those needs.

Under the Space Act Agreement, NASA and New Scale will work together to test and improve the cryogenic SQUIGGLE™ motor at temperatures as

low as 4 Kelvin. Potential NASA applications for cryogenic SQUIGGLE™ motors include adaptive optics in large aperture telescopes and heat switches in cryogenic cooling systems. Potential commercial markets include the following:

- Cryogenic imaging systems for remote sensing and security surveillance
- Basic materials research in cryostats
- Microelectronic inspection and testing.

For more information about New Scale's SQUIGGLE™ motor, contact Fred Haas (585-924-4450 or fhaas@newscaletech.com). For more information about NASA Goddard's cryogenics research, contact Dr. Peter Shirron at 301-286-7327 or Peter.Shirron@nasa.gov.

NAPA REVIEWS NASA'S TECH TRANSFER PROGRAM

by Dave Appler, FLC Washington, DC Representative

In January 2004, NASA requested that the National Academy of Public Administration (NAPA) undertake an independent review and study of the NASA technology transfer program.

The study was completed in November 2004 and released by NASA in December 2004. While the findings and recommendations are certainly of keen interest to the NASA technology transfer community, some points raised are worth consideration by those in other agencies. A copy of the 140-page report can be accessed at <www.napawash.org/Pubs/NASATechTransfer12-14-04.pdf>.

The following is an excerpt from the Foreword to the NAPA study report.

"The Innovative Partnership Program (IPP) is responsible for NASA's technology transfer efforts. In 2004, IPP shifted its primary focus from commercializing NASA's technology ("spin-out") to a much greater emphasis on bringing technology from the private sector into the agency to meet mission needs ("spin-in"). NASA asked the Academy to conduct an independent review of the technology transfer function and determine how it should be organized to maximize benefits to NASA and the nation as a whole.

The Panel overseeing this Academy study recommends that the NASA Administrator make a stronger leadership commitment to technology transfer by establishing it as a core element of the agency's mission and moving the function to the Administrator's office. The Panel's fundamental conclusion is that technology transfer is destined to fail so long as it is viewed solely as the responsibility of an isolated group of IPP officials."

The report's four-page Executive Summary addresses the three principal areas NAPA covered in its report.

First, it addresses "the fundamentally changed environment" that NASA's technology transfer program must operate in today. (Note that this is an operating environment that has changed not only for NASA but for other agencies as well, although not necessarily in all the same ways.)

Second, the summary outlines the principal findings

and conclusions of the study team. Third, it briefly describes eight recommendations on the roles and responsibilities that have the potential to bring about positive change to the NASA technology transfer program.

The body of the report consists of four chapters. Chapter 1 describes the study methodology and some background on technology transfer at NASA. Chapter 2 looks at "Effective Practices of Government, Industry, and Academia and Their Relevance to NASA." Some of the subjects include leadership commitment to technology transfer, use of external capabilities to augment staff, effective practices for spin-in, and review of technology transfer in other agencies, academia, and industry and their relevance to NASA.

Chapter 3 examines "NASA's Technology Transfer Function and the Innovative Partnerships Program." This chapter describes the inner workings of the NASA program and some of the challenges involved with running the program, including its multiple web sites, intellectual property processes, and the difficulty developing good outcome measures as required by the Government Performance and Results Act. Chapter 4 addresses "How the Technology Transfer Program Can Be Reformulated to Be Effective Agents For NASA."

The following summarizes the eight recommendations concerning the roles and responsibilities of the various entities involved in the NASA technology transfer program.

- Recommendation 1: The NASA Administrator, through his leadership commitment, should support an agency-wide technology transfer effort as a core element of the agency's mission. Suggested actions include establishing meaningful performance standards for technology transfer as part of the performance measure for the associate administrators of each mission directorate, and establishing robust

See NAPA Reviews NASA T², page 6

FLC NEWSLINK

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TECH WATCH | LABORATORY TECHS READY FOR TRANSFER

NASA GLENN FORMS COPOLYMER FOR BATTERIES



Scientists at the NASA Glenn Research Center have developed a new polymer material that will simplify lithium battery construction and significantly reduce cost.

Lithium batteries have the highest power density of any commercially available battery.

A comparable lithium battery has approximately four times the power density of a nickel metal hydride battery and five times the power density of an alkaline battery of the same size.

However, they are very expensive—five times as expensive as alkaline batteries. This high cost has limited their market appeal.

Much of the expense is due to the complex assembly of lithium batteries and the elec-

trolyte technology that they use. Current state-of-the-art solid polymer electrolytes (polyethylene oxide) must operate at high temperatures (60°C or 140°F) to pass a sufficient number of ions to get useful current from a lithium battery.

To produce acceptable room-temperature performance, current lithium batteries use a gel polymer electrolyte or a liquid electrolyte combined with a solid separator, which keeps the anode and cathode from touching each other and shorting electrically. The ability to use a solid polymer electrolyte would greatly simplify lithium battery construction and significantly reduce cost.

Scientists at the NASA Glenn Research Center have developed a new polymer material that finally solves this problem.

The rod-coil block copolymer combines the mechanical strength needed to keep the anode and cathode separate with the ion conductivity approaching that of a liquid electrolyte, all in one tough, flexible film.

It does this by alternating rigid polyimide "rods" with flexible "coils" of polyethylene oxide (PEO).

Although developed for use in space applications such as planetary orbiters,

landers, rovers, space suits, portable space "power tools," and reusable launch vehicles, the reduced cost of the new solid polymer lithium batteries is expected to have an impact on applications closer to home, such as small handheld electrical devices, digital cameras, cell phones, calculators, and cordless power tools.

NASA is seeking to license the rod-coil block technology.

For further information, contact the NASA Glenn Technology Transfer and Partnership Office, Attn: Steven Fedor, Mail Stop 4-8, 21000 Brookpark Road, Cleveland, OH 44135. Refer to LEW-17299-1.

NAVSEA ADAPTS FIBER OPTICS FOR PERIMETER SECURITY SYSTEM

Engineers at the NAVSEA Naval Undersea Warfare Center Division Newport, Rhode Island, have successfully adapted fiber optic sensor technology, originally developed for the detection of enemy submarines, to detect and locate intruders into secured areas.

Exploiting Rayleigh optical scattering, a buried single-mode communication optical fiber is able to sense sound pressure waves emanating from people and vehicles moving near or over the buried fiber.

The fiber optic sensor is inexpensive and easy to deploy. Associated signal processing allows the operator to adjust the size of detection zones to localize an intrusion. Long perimeters or borders up to 15 kilometers in length can be secured with a single set of electronics.

Applications for this technology include security protection of buildings, airports, borders and infrastructure.

The fiber optic perimeter security system can be integrated with other installed security systems such as videocameras, infrared motion detectors, microwave detectors and radars.

For additional information, contact Dr. Theresa A. Baus, Technology Transfer Manager, at 401-832-8728 or BausTA@npt.nuwc.navy.mil.

INDUSTRY COULD BENEFIT FROM LANL'S MAGNETIC MICROSPHERE RESEARCH TOOL

From ensuring the safety of the world's food, water, and air supplies to monitoring the efficacy of medical treatments, the detection and manipulation of biological material is critical to many large industries.

The use of magnetic microspheres for separation and identification of specific biomolecules is a growing area in biological research and diagnostics.

Los Alamos National Laboratory (LANL) has a patent-pending technology for a method and an apparatus for using magnetic microspheres to bind, sort, and collect biomolecules of interest. This invention has applications in medical diagnostics, detection of bacteria and bioagents, environmental monitoring and genomics, and proteomics research and can process a large number of biomolecules at once.

For example, magnetic microspheres can be used to determine accurate CD4/CD8 lymphocyte counts, necessary for monitoring drug therapies for AIDS at a cost and speed that make access to monitoring attainable in the developing world.

The wide variety of applications includes many biotechnology and clinical markets, which have an estimated value of more than 50 billion dollars annually.

Unique benefits of this invention include:

- Simple, easy-to-use and inexpensive technique for biomolecular separation
- Multiplexed and high throughput
- Rapid, highly specific assay
- Rugged and field-deployable.

Patent applications have been filed for this invention, and further development is ongoing. LANL is seeking an industrial partner to commercialize the magnetic microsphere technology.

LANL's commercialization goal is to identify the optimal strategy and partners to most effectively transfer the technology into commercial markets.

More info: Allen Morris, P.O. Box 1663, Mail Stop C33, Los Alamos National Laboratory, Los Alamos, NM 87545, 505-665-9597, tamorris@lanl.gov

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Seeing Protein, from page 1

the lab in the last 5 years while supporting a strong educational component.

SOLVE/RESOLVE improves the accuracy and detail of protein images obtained from x-ray crystallography. It then interprets these images and builds accurate atomic models of the proteins.

Although these software packages can work independently, together they can fully automate the entire analysis of x-ray crystal data from diffraction spots to an atomic model.

In 1998, SOLVE received an R&D 100 Award as one of the world's top 100 scientific and technological advances to show the most significant commercial potential during the preceding year.

LANL applied two principal innovations in its approach to tech transfer for SOLVE/RESOLVE. First, Terwilliger spearheaded use of the Internet as a licensing avenue, creating an Internet site with the URL of <www.solve.lanl.gov>.

Then, with the help of the laboratory's technology transfer staff, he created a two-tiered licensing fee for government, commercial, and noncommercial institutions.

The first tier enables potential users to request SOLVE or RESOLVE for a free 45-day trial. For a full license, a user

completes a form and clicks to activate a second tier. Based on the information provided, a server automatically creates a customized licensing agreement suitable for printing. Payment is typically made by check or bank wire transfer.

The second licensing innovation encourages users to give feedback on software improvements, that would help their specific applications.

Users have asked for and obtained many such improvements, including the automatic identification of how drug molecules bind to proteins.

This identification process is used as part of the drug-design process at pharmaceutical companies.

With SOLVE/RESOLVE, scientists worldwide are building protein models to see the shapes of proteins, and from these determine which molecules might bind to a given protein and how the protein might work.

As a result, medical researchers are taking the first steps in developing pharmaceuticals and treatment options that will significantly address and perhaps eliminate diseases ranging from arthritis and hemophilia to diabetes and cancer.

More info: Visit the Los Alamos National Laboratory web site at www.lanl.gov.

NIST Heart Attack Help, from page 1

from cadavers. Users can calibrate their assays by analyzing the SRM and comparing the results to the NIST-certified value for troponin I.

If results deviate from the known concentration, corrections can be made accordingly.

Reliable measurement references like SRM 2921 improve the reliability and comparability of clinical tests, making it easier for physicians to interpret results.

Industry adoption of the new SRM has been quick. Within months of its release, Abbott Laboratories launched a new diagnostic assay (AxSYM Troponin-I ADV) reported to improve troponin detection and deliver results more rapidly.

"It was important to provide not only an accurate and sensitive test, but also one that offered standardized results to better meet today's evolving standards of care," said Abbott in a press release.

More info: Visit the National Institute of Standards and Technology web site at www.nist.gov.

Navy's Disaster Relief, from page 1

chemical warfare agents. These agents include anthrax, plague, smallpox and common waterborne pathogens such as bacteria, viruses, and protozoa, including E. coli, Giardia, and Cryptosporidium.

"The purpose for developing the water disinfection technology was to provide the warfighter a portable water purification device during tactical missions, a key lesson learned in a number of previous conflicts," Negrón said.

DARPA began this task by looking for emerging technologies that would meet this requirement. In 1998 it found a company called the MIOX Corporation that specializes in producing municipal and commercial water purification technology.

MIOX had already produced a large-scale system using funding from a Small Business Innovative Research grant from the U.S. Army.

Dr. Bill Warren, DARPA's program manager for the project in 1998, recognized the potential of the MIOX technology to meet their requirements, and encouraged a relationship between MIOX and CDI, a leading manufacturer of outdoor consumer gear. Warren strongly advocated using a program strategy to include the military end user and the manufacturer as early in the development cycle as possible.

DARPA contracted with MIOX and CDI to refine and commercialize the MIOX purifier and miniaturize the MIOX technology to the approximate size of a felt-tipped pen – small enough for the individual soldier.

According to Kevin Gallagher, military affairs manager for CDI – also known as Mountain Safety Research – the 3.5-ounce MIOX purifier uses the power from two camera batteries to convert salt-water into a mixed oxidant solution – basically a chlorine-based liquid disinfectant.

The pen produces about two milliliters of mixed oxidant within 30 seconds, and this is then added to the water gathered by the soldier before he or she drinks it.

"Almost any type of salt will work," Gallagher said. "You can use regular table salt, rock salt or water-softener salt."

The user can treat anywhere from a half liter to four liters of water at a time, including the standard two-liter volume carried within a self-contained hydration bag. According to Gallagher, unlike with use of iodine or chlorine tablets, the water tastes very good as long as the purifier is properly dosed. Purity of the water can be verified with a safety indicator strip.

No pumping is required to treat the water, and the mixed-oxidant disinfectant solution is generated almost instantaneously.

Gallagher said the pen supplies enough energy to purify up to 50 gallons of water, which takes about 30 minutes.

Warren's strategy paid off, rendering early and effective prototypes that exceeded the EPA's "Guide Standard and Protocol for Microbiological Purifiers" in independent laboratory studies in 2002.

The project reached completion during the summer of 2004, according to NSWC PC's Coastal Maritime Security Research and Development Senior Scientist Frank Downs.

Downs was hired by DARPA as technical consultant and military liaison in 2000 to assist with refining the technology and to ensure the product met the needs of the warfighter.

"Once the device met the needs of the EPA protocol, we had a commercial off-the-shelf product," Downs said. "This eliminated the need to meet DOD Mil-Spec requirements, yielding further reductions in time and costs."

The Water Purification System/Water Pen Unit was funded as a Technology Transition Initiative (TTI) project in FY 2003 and FY 2004 to bridge the gap between DARPA's development funding and scheduled procurement in FY 2005. The TTI program facilitates the rapid transition of new/mature technologies from DOD science and technology

programs into acquisition programs for the production of those technologies.

TTI funding allows successful demonstration of these technologies in relevant environments and accelerates their introduction into operational capabilities for our armed forces.

The TTI program funded the purchase of 6,500 water purification pens, accelerating their introduction and use throughout the services and Special Operations Command by an estimated 18 to 24 months.

Commending DARPA predecessors Bill Warren and the late Mike Gardos for their management strategy, Negrón stated, "DARPA helped accelerate the miniaturization of the disinfection pen, thus reducing the logistic tail requirements for the services."

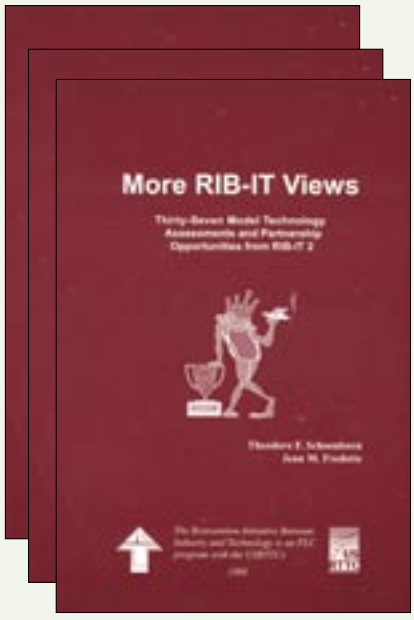
Negrón said the MIOX purifier could be used for disaster relief after a hurricane or when a humanitarian need exists to disinfect already contaminated water sources.

MIOX Vice President of Engineering, Research and Development, Rodney Herrington, said his original idea was to create "an effective device in the hands of anyone in the world that would need it – something that just used regular salt and some batteries to save lives."

Warren said Herrington's vision mirrored DARPA's mission: to develop technologies with the potential to have an impact on many areas and across numerous disciplines.

"In 1998 when the relationship with DARPA started, terrorism was just a nuisance," Herrington said. "Since 9/11, terrorism has added a whole new rationale and justification for the technology."

The purifier is available through the Government Services Administration web site (GSA #GS-07F-5451R) or through the Department of Defense's National Stock Number catalog (NSN 4610-01-513-8498).



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FLC Loses a Friend, from page 1

the FLC's Technology Transfer Fundamentals training course. She also helped redesign the structure of the FLC's training program, and developed and administered procedures used to evaluate FLC training courses.

Joan took the lead in the development of the FLC's T² Training Resources Database (T² TRDB), an online database tool that identifies existing training resources available in the federal laboratory system, the FLC, and not-for-profit organizations, and served as liaison between the FLC and Westminster College, the FLC's partner in the T² TRDB project.

In addition, Joan was deeply committed to the FLC's online T² training program, which is currently under development.

In 2003, Joan received the FLC's Outstanding Service Award, which "recognizes an individual who is not an FLC Representative or Alternate for a notable contribution to the FLC in terms of sustained support and/or service."

As Lynn Murray, E&T Committee Chair and a close friend of Joan's, noted, "Joan left a lasting legacy to the FLC through her contributions to the Education and Training Committee...Joan will be sorely missed."

In addition, in recognition of the impact Joan has had on the FLC as the friend of so many FLC members as well as for her invaluable

support of the FLC's training activities, FLC Chair Ed Linsenmeyer announced that the 2005 FLC national meeting will be dedicated to Joan's memory.

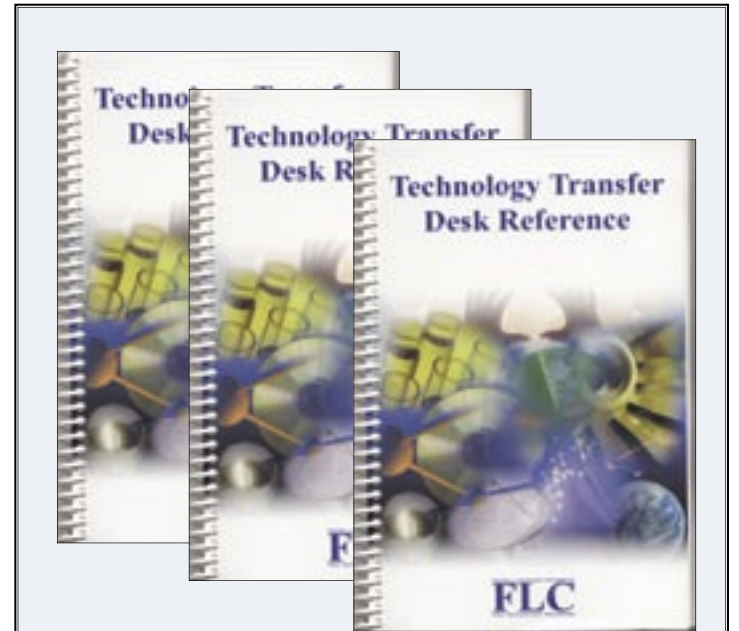
Joan was born in Albany, New York, and spent her professional career as an education specialist. She earned a B.A. in English (1963) and an M.S. in Information Science (1964) from the State University of New York at Albany.

She held key management positions in medical research and special education with the New York State Department of Education. In 1979, Joan moved to Colorado, where she assisted the Director of the National Renewable Energy Laboratory with strategic planning and administered the laboratory's education programs.

In 1992, she moved to Salt Lake City, working as an independent education consultant and as a librarian in the Salt Lake County Library system and the Reid School.

Joan is survived by her beloved husband, Dr. Thomas G. Squires, who also is a very active supporter of the E&T Committee.

Memorial donations may be made to the Joan Miller Library Fund, Reid School, 2965 East 3435 South, Salt Lake City, UT 84109-3161.



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Energy Tops EPA's List, from page 1

electricity could be cut by 50% by 2025, resulting in billions of dollars in savings to customers, contributing to lower prices for natural gas, and substantially reducing greenhouse gas emissions.

Through the EERE projects, EPA and the states or jurisdictions will explore policies and programs for delivering more energy efficiency to electric and gas customers.

In a growing number of states across the nation, these efforts deliver energy savings at a significantly lower cost than building new electricity supply or buying natural gas. The joint initiative will also explore opportunities for combined heat and power and renewable energy to contribute to a lower cost, cleaner power system.

Projects will build upon a decade's experience by EPA's ENERGY STAR program for helping utilities and others implement

low-cost energy efficiency programs to deliver energy savings to their customers.

With help from ENERGY STAR, Americans have reduced national electricity demand through 2004 by almost 4 percent, saving \$10 billion annually and avoiding greenhouse gas emissions equivalent to those of 20-million vehicles.

Climate change solutions

Long-term innovation focused on new forms of energy, and energy technology is the best way to address climate change challenges, suggests a report released Feb. 16 by the U.S. Chamber of Commerce in Washington, D.C. "The Kyoto Protocol will simply not work," said William Kovacs, the Chamber's vice presi-

dent of environment, energy and technology affairs. "There are few ways to control emissions of CO₂ without closing businesses and stopping cars."

The Chamber's report, "Reality Check: Straight Talk About the Kyoto Protocol," examines what it believes is wrong with the treaty and why its implementation may be unwise. "A focus on technology is needed and has a better likelihood to achieve the reductions in global emissions than the Kyoto agreement seeks," Kovacs claimed last week.

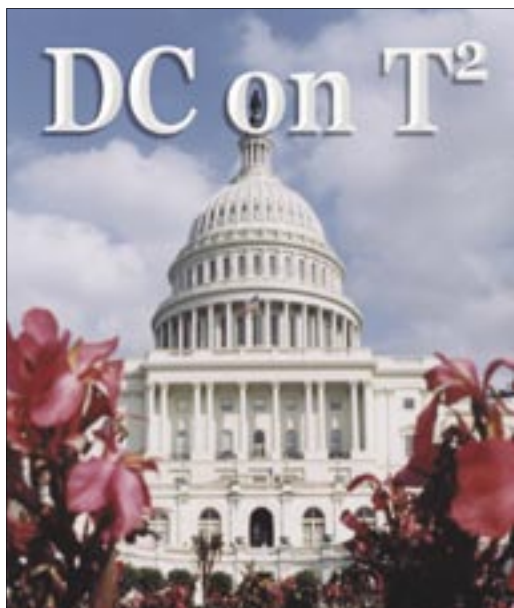
"Innovations in energy, not mandates divorced from science, will reduce CO₂ without damaging the economic viability of the [nation]," added Kovacs. "Only with a strong economy

are we going to achieve the technological advances needed to make our air cleaner."

U.S. businesses operating in countries that have ratified the treaty will need to comply with requirements imposed by those nations.

The Chamber, which is the world's largest business federation, believes the treaty's mandates will "stifle investment, economic growth and technological innovation," and claims that U.S. companies have spent over \$2 trillion on environmental protection over the past 30 years.

The Chamber's report can be found at: <www.uschamber.com/goto/realitycheck_kyoto>.



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incentives (financial, scientific, career development, etc.) for NASA scientists and engineers to perform technology transfer.

- Recommendation 2: Relocate the headquarters technology transfer program office to the Office of the NASA Administrator to give special emphasis to this agency-wide responsibility and begin holding executives accountable for this function. The rationale of the study team is that technology transfer should be a responsibility of all NASA mission directorates, not just the one where it is currently located.

- Recommendation 3: The NASA mission directorates, in conjunction with the NASA field centers and program heads, need to develop better strategies to bring technology from outside NASA (spin-in) into NASA's program through the use of partnerships and procurements tied to NASA's mission needs. Suggested actions include the NASA technology transfer community in the headquarters, field offices, and through NASA's affiliate organizations working with the mission areas to identify needs and to develop potential partnership opportunities and procurement strategies to maximize spin-in of ex-

ternal technologies. This suggests the integration of technology transfer as an integral part of the NASA mission. They also suggested that the SBIR and STTR programs give greater emphasis on the opportunities to spin-in technologies from the private sector.

- Recommendation 4: Make the NASA field center directors responsible for the spin-out aspects of technology transfer, including additional staffing and activities beyond NASA Headquarters-funded activities. Actions would include having NASA Headquarters provide policy and oversight, and having the field centers emphasize formulation of technology commercialization plans, contractor technology reporting, and use of the NASA Techfinder web site.

- Recommendation 5: NASA's external technology transfer network should be reformulated and streamlined to provide more effective support to the NASA technology transfer program. Suggested actions include having one national contractor do market research, be the primary link to private industry and universities, and serve as a communication link between the NASA centers to promote common awareness of the various center technology transfer activities. Also included were the establishment of an appropriate link between this national contractor

and NTTC and establishment of a performance-based contract at NTTC.

- Recommendation 6: Improve NASA's technology transfer web sites, provide a single web portal, and integrate information and management systems in support of business operations in technology transfer.

- Recommendation 7: The NASA Headquarters IPP office and the Office of General Counsel need to establish and monitor processing-time performance standards for patent applications, licenses, and partnership agreements.

- Recommendation 8: Develop a comprehensive system for evaluating NASA's technology transfer efforts. Suggested actions include developing a performance measure for activities such as processing times for licensing agreements, number and quality of partnerships generated, and success stories; assessments of long-term economic and social impacts; and individual and organizational performance standards for all relevant officials.



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