



The Retriever Project

Navy to provide Hi-Tech Help for a Low-Tech Solution

Every year 150,000 people around the world drown. The United States has lost an average of 5000 citizens each year since 1978. "Reach, Throw, Don't



Go" has been the predominant intervention philosophy during this period due to the loss of life often experienced by those attempting a water entry res-

cue. What is implied is to await professional response. The problem is that in unguarded waters professional response arrives too late. A drowning is often a sixty-second event and the best response time reported by professionals is eight minutes. What has been needed for years is an effective device that can deliver adequate buoyancy out to the death zone of 30-70 feet off shore and facilitate rapid recovery of the victim. Lack of performance exhibited by traditional tools often leaves would-be rescuers feeling compelled to dive in after the victim leading to additional deaths. Few are trained or conditioned to make "water entry" rescues. Traditional response agencies, such as Police, Fire and EMS groups that have lost officers are enacting mandates against "water entry" rescue attempts. A group of former rescue professionals began the Retriever Project to address this situation.

The Retriever Project pinpointed the causal factors and designed a unique rescue device named the Personal Retriever that has the potential to significantly reduce these drowning deaths worldwide. A two-part program has been developed to bring this Rescue Device to the marketplace to provide people around the world a safe and effective means of drowning intervention. Step one is the tool design phase and is almost complete. The Personal Retriever's current design will handle the event's demands in the hands of a trained professional and should enable a more proactive response program to be established. Step two is to test and evaluate a series of protocols that would lead to standard uses

From the Regional Coordinator's Desk



I have enjoyed working with the Regional (Laboratories) over the past four years as the Regional Coordinator. There have been some positive changes made in strengthening, the

Regional Labs' presence on the Internet. The database information now linked to each lab will ensure an international presence and hopefully increase technology transfer opportunities for all the ORTAs.

The outreach program, Core 21 Project, brought opportunities for the Laboratories to work with academia. The ongoing outreach program, Federal Resource Access Program (FRAP) will continue to match the needs of companies in the metropolitan areas of Seattle, San Francisco, Los Angeles, San Diego, Phoenix and Tucson with the resources of the laboratories. We are working with the Department of Commerce to coordinate the feedback from the surveys. I strongly encourage all ORTAs to use the survey in identifying partnership opportunities in their areas of interest. The survey will help pin point the marketing potential for individual ORTAs by targeted area and location. The survey is available to download from the FW Internet site: <http://www.zyn.com/flcfw/>

We are in the process of making a CD-ROM card for the Region. The card will be used to market the FLC FW Region's service. The card will also be a useful tool for all ORTAs and FLC Participants to review the FLC structure and the FW's

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capabilities.

Unfortunately with the recent terrorist activities and the challenges facing the United States government the decision has been made to not have a regional meeting in the last quarter of the 2001 calendar year. The region will focus on collocating the Regional meeting and training program with the National SBIR Conference in Anaheim, CA March 11-14, 2002. Prior collocation with the National SBIR conferences has provided national visibility for the region and furnished our laboratories opportunities for technology marketing and the development of partnerships with motivated small high tech business clients.

The call for candidates for the positions of Regional Coordinator and Deputy Regional Coordinator has gone out. As a laboratory representative if you have not received this call for nominations via mail and e-mail, please contact Del DelaBarre at del@dbamlg.com. The voting process will take place in December. The election procedures and process will

be coordinated by DelaBarre & Associates, Inc. (DBA, Inc.). Call 360-681-6144 or email del@dbamlg.com if you have any questions.

I want to express my sincere thanks to every ORTA in the region for working with me and providing support, suggestions and feedback on the Regional projects. I also want to thank our Regional support contractor DelaBarre & Associates, Inc. for their timely and professional support. I wish all of you continued success and hope that the FLC will continue to provide the type of service that will make your job easier and enhance your performance in meeting your facility's technology transfer objectives.

Lastly to the incoming regional officers I want you to know that you can count on my support during the transition period and in the future. Additionally the Regional support contract final year option has been approved for the next fiscal year with DelaBarre & Associates, Inc. which will help provide program continuity for the new officers.

NASA & the "Cocktail Party Effect"

A 3-D audio processor developed for space shuttle mission controllers will soon find its way into virtual classrooms across the country.

BreakAway Sound of Los Angeles, CA has received a license for further development and marketing of the Ames Spatial Auditory Display (ASAD) communication tool. The revolutionary technology, developed at NASA's Ames Research Center, makes radio communications more easily understood by taking advantage of people's natural ability to localize sounds.

"The NASA flight director at mission control in Houston is sometimes required to listen to and understand as many as seven different voices at the same time," said Dr. Durand R. Begault of Ames. "Traditional communication systems involve listening to multiple voices with only one ear, which is disadvantageous for speech intelligibility," he added.

"Our everyday ability to listen to one desired voice out of a collection of different voices is known as the 'cocktail party effect,' which depends on two-

ear listening to separate the sounds in space," explained Begault. "The ASAD simulates this by effecting directional cues for each input based on time and level differences at the ears."

ASAD's unique design provides highly adaptable, immersion sound technology for applications in physical and virtual computer realms, virtual game and multimedia technology, consumer electronics, aeronautic, submarine and emergency rescue technologies.

BreakAway Internetworking Group, the parent company of BreakAway Sound, has established 215 community technology centers around the world. The company now is linking the key centers together via the Internet to deliver e-training, i-galleries, i-books, i-radio and i-TV. "We understand that more realistic 3-D immersive sound will enhance the on-line audio experience," said Maisha Hazzard, president and CEO of BreakAway Sound. "ASAD allows the quality of the audio to finally match the advances in 3-D video."

By the year 2003, it is anticipated that ASAD may be ready for application in

air traffic control, emergency communication, virtual conferencing, distance education, virtual classrooms and entertainment industry environments.

"NASA has superb innovative capabilities, but transferring our technology to the right strategic partner is a challenge," noted David Lackner, Ames' technology commercialization manager. "In BreakAway, we have a firm that is in a prime position to take NASA R&D to market."

"This is a great example of NASA's ability to work with private industry to commercialize dual-use technology. I look forward to creating more partnerships like this one, where we achieve tangible benefits in cooperation with dynamic entrepreneurs," Lackner added. NASA's Far West Regional Technology Transfer Center continues to assist in this commercialization effort.

Laboratory Profile

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Background:

The Naval Facilities Engineering Service Center (ESC) is the Navy's premier specialized facilities engineering and technology service center. ESC supports the Fleet and Naval Facilities Engineering Command (NAVFAC) clients with cost effective, responsive solutions using leading edge technology and resources. ESC is headquartered in Port Hueneme, California at Naval Base Ventura, with a workforce of 516 civilians and 17 military professionals. ESC's five major areas of expertise and business are Shore Facilities, Ocean Facilities Engineering, Amphibious and Expeditionary Operations, Energy and Utilities Systems, and Environmental Engineering.

Mission:

Our mission is to identify and apply emerging engineering solutions through engineering, design, construction, consultation, test and evaluation, technology demonstration, implementation, and program management support. We leverage technology to enhance our clients' effectiveness and efficiency. We use existing technology where we can, identify and adapt breakthrough technology when appropriate, and perform technology development when required. By doing this, we extend the life of waterfront facilities, improve the operation and safety of ship support systems, and work within environmental constraints while saving time, money, and energy.

Business and Product Lines:

Ocean Facilities:

Focus on improving the Navy's capabilities for the design, construction, maintenance, and repair of fixed ocean facilities. Regions of interest include all seafloor environments in water depths up to 20,000 feet. Technologies and services include marine geotechniques, ocean structures, undersea warfare, underwater cable facilities, hyperbaric facilities, mooring systems, magnetic silencing facilities, underwater inspection programs, ocean construction equipment inventories, pipeline integrity assessments, and coastal facilities.

Amphibious & Expeditionary:

Focus on supporting and enhancing construction capabilities, maintenance, and war-damage restoration for advanced bases. Technologies for high mobility forces in combat support and combat service support roles have also been developed in support of the Marine Corps doctrine of Expeditionary Maneuver Warfare (EMW). The D-Day Mobile Fuel Distribution System is one set of technologies recently developed to meet initial amphibious assault fuel requirements for forces ashore from a standoff distance of 30 nautical miles.

Energy & Utilities:

Focus on the Naval shore establishment's energy program through the development of new technologies encompassing all facets of energy supply, distribution, and consumption. The program is structured to achieve maximum practical energy conservation and to develop reliable, cost-effective alternate or renewable energy sources to replace petroleum and/or natural gas. Specific areas include energy conservation systems, energy data management, energy technology transfer, energy and utili-

ties management, control systems, utility systems, and communication facilities for utilities.

Environmental Engineering:

Focus on customizing technology to meet the Naval shore establishment's environmental requirements for more than 185,500 fixed facilities and more than 100,000 natural ecosystems. ESC's goal is to facilitate compliance with new and more stringent environmental legislation and regulations at all government levels in a cost-effective manner. Efforts concentrate on environmental restoration, waste management, environmental compliance, environmental data management, environmental technology transfer, pollution prevention, indoor air management, and oil spill prevention and cleanup.

Shore Facilities:

Focus on new concepts and systems in waterfront facilities, physical security, ordnance facilities, aviation facilities, base survivability, and engineering technology applications. New capabilities result in more flexible and economical methods for resolving major Fleet shore facilities challenges. ESC is the Navy's lead in developing new security and engineering concepts and technology to enable the Navy to better protect its personnel and assets from vandalism, sabotage, theft, terrorism, and other unlawful acts.

Unique Facilities and Assets:

Deep Ocean Laboratory (DOL):

The DOL houses a family of pressure vessels and supporting equipment that simulate the pressures and temperatures of the deep ocean environment. Some vessels are capable of generating hydrostatic pressures up to 20,000 pounds per square inch, which would be the equivalent of an ocean depth of

45,000 feet. The DOL houses the largest pressure vessel west of the Mississippi River, and is available for use by private industry as well as government agencies.

Chemical Analysis and Materials Testing Laboratory:

This laboratory provides materials identification and failure analysis, construction materials testing, laboratory data to support construction, and environmental chemistry analysis. A wide range of equipment includes a scanning electron microscope, state-of-the-art chromatographs, and a variety of spectroscopy tools. Environmental and weathering test chambers simulate hot and humid/dry climates, high sunlight exposure, cold and dry/humid atmospheres, and seawater and salt fog exposure.

Advanced Waterfront Technology Test Site (AWTTS):

The AWTTS is a 150-foot, all-composite demonstration pier. This facility serves as a national center for the development, evaluation, and demonstration of new concepts for upgrading, repair, and life extension of waterfront structures, with special emphasis on composite materials.

National Environmental Technology Test Site (NETTS):

ESC manages the Navy's NETTS, located at Naval Base Ventura County, Port Hueneme. As part of the DoD/National Environmental Technology Demonstration Program (D/NETDP), the site provides *in-situ* (in place) and *ex-situ* (removed from original site) locations used to demonstrate advanced characterization and cleanup technologies for diesel fuel, gasoline, and waste oil contaminants in soil and groundwater.

This site is available to government, universities, and industry principal investigators and the technologies which prove effective can be immediately applied in the environmental clean up of federal land.

Motor Vessel INDEPENDENCE:

ESC owns and operates the M/V INDEPENDENCE ("*Indy*"), a 200-foot ocean-going ship with worldwide capabilities. Originally built to support space shuttle missions, the "*Indy*" and her crew can be contracted for a variety of ocean systems missions. The "*Indy*" often acts as an ocean-going platform for ESC's Phantom DHD2+2 and MAXRover, ESC's Remotely Operated Vehicles (ROVs). The ESC's ROVs and their operators have a distinguished record of undersea operations including cable inspection, search and recovery, and more.

Seawater Desalination Test Facility:

Our 3,000-square foot seawater desalination test facility is located near the Port Hueneme, harbor entrance. This world-class facility is used for long-term test and evaluation of existing and emerging water purification and desalination technologies for both government and industry. This is the only desalination test facility located on the West Coast with direct access to seawater from the Pacific Ocean, and is operational on a 24-hour basis.

Detection of Chemical Warfare Agents

Researchers can more quickly detect minute residues of chemical warfare agents adhering to solid surfaces using a novel mass analyzer. They can isolate trace amounts of chemical warfare agents within the instrument and then break them apart to obtain chemical identification.

Researchers at the Department of Energy's INEEL can detect part-permillion levels of chemical warfare agents such as the blister agent HD or the nerve agent VX using a novel iontrap secondary ion mass spectrometer (IT-SIMS).

INEEL researchers are developing surface analysis instrumentation for environmental samples such as soil or plant surfaces. Better analytical techniques for these kinds of materials support environmental restoration and national security Department of Energy missions. Chemical warfare agent detection is just one application of IT-SIMS.

Using IT-SIMS, researchers bombard the surface of a sample with a polyatomic projectile to lift of "sputter" off molecules adhering to the sample surface. The sputtered molecules, called secondary ions, retain the chemical characteristics of the chemical warfare agent stuck to the surface of the soil. The secondary ions are filtered by mass and then counted.

That data is displayed as a spectra (a bar graph that plots the number of ions versus their mass) that researchers then use to identify the chemicals.

IT-SIMS is particularly suited to applications such as chemical weapon agent detection because such chemicals are designed to be both adsorptive and persistent-to stick to any and all surfaces and stay there. Using IT-SIMS, researchers can collect large numbers of intact ions from the sample surface and accurately identify the chemical substances. Researchers can analyze samples as small as 3 to 4 mg with minimal sample preparation on the order of 5 minutes.

Purpose of the current two-year study is to test the feasibility of using IT-SIMS to detect chemical warfare agents, and then develop portable instrumentation. The design and fabrication work, chemical agent degradation product and precursor testing is being carried out at INEEL facilities.

Testing of live chemical warfare agents is being conducted under controlled conditions at the U.S. Army West Desert Test Center Chemistry Laboratory, Dugway Proving Ground, Dugway, Utah. This research is supported by the Defense Threat Reduction Agency (DTRA).

PNNL Scientists Honored by Discover Magazine

Two scientists at Pacific Northwest National Laboratory (PNNL) were among the nine Discover Magazine Innovation Award winners. Discover Magazine and the Christopher Columbus Foundation recognized Robert Wind and Richard A. Craig, both physicists, for their technologies that address vital health and humanitarian issues.

Wind accepted the top honor in Discover's Health category for inventing a combined optical and magnetic resonance microscope that has potential for improving the detection and diagnosis of diseased cells and in evaluating a patient's response to chemotherapy.

The combined microscope allows scientists to study live cells and how they respond to stresses over time. It couples the advantages of extremely high-resolution images with the ability



to capture physical and chemical information of cells.

The Christopher Columbus Foundation granted Craig a \$100,000 fellowship for development of a technology that quickly and inexpensively locates metal and plastic landmines. The portable Timed Neutron Detector recognizes the presence of hydrogen in landmines' casings and explosive materials.



"This device can be produced for use by Third World countries at a relatively low cost, yet the savings in human life and suffering could be priceless," said Rosalyn Queen Alonso, Christopher Columbus Foundation chair.

For more, see www.pnl.gov/news/2001/01-21.htm.

What's That Technology Worth?

Aside from developing a new technology, determining its value is by far the most complex and important part of the entire Intellectual Property (IP) process. Properly prioritizing R&D projects can prevent viable technologies from languishing on the shelf or reduce the possibility of spending vital development time and money on a technology that may not be worth the resources put into it. Services like the Patent & License Exchange, Inc. (pl-x) provide financially oriented IP valuation products that can help value and proactively manage the IP process.

Many of these tools and services are geared toward research organizations, like the Far West Region laboratories, looking to capitalize on the value of their intellectual property. "Our members have exciting technologies but connecting with their target markets has been somewhat problematic," said Dr. Michael Sullivan, Regional Coordinator. "The tools and services of organizations like pl-x may be the ideal solution for

our member laboratories because they provide a fast, cost-effective valuation tool that is based on a proven financial model and backed with marketing and transaction support."

These valuation tools can allow users to conduct early stage technology assessment, prioritize out-licensing projects and confirm value for R&D projects. In addition to metrics valuation tools, marketing support of patents through a web portal accessible worldwide are available. This feature can significantly lower travel expenses, while increasing visibility to potential customers.

The Patent & License Exchange, Inc. states that their calculated indications of value produced by pl-x developed metrics help organizations make strategic resource allocation decisions for technology investments and is a key aid when seeking to harness the full value of their IP. TRRU? metrics, based on the Noble Prize-winning Black-Scholes

options pricing formula, has already helped companies monetize assets through licensing, debt and equity capital creation, and patent enforcement transactions.

"Valuing and marketing intellectual property has never been easy," said Greg Van Dyke, vice president of business development for The Patent & License Exchange, Inc. "We developed our software to support tactical decision making during every phase of the IP life cycle."

Patent & License Exchange, Inc. has expressed a desire to work with the FLC laboratories and describe the efficiencies pl-x's IP valuation and marketing tools would incorporate into the laboratory process.

Contact:
Dave Edwards 888-465-0690 ext 331
or email at dedwards@pl-x.com.

World's Largest Unclassified Supercomputer Goes Online

Scientists at universities and national laboratories across the country are now tapping into the power of the world's largest supercomputer dedicated to unclassified research and have reported important breakthroughs in climate research, materials science and astrophysics.

The U.S. Department of Energy's National Energy Research Scientific Computing Center (NERSC), operated by Lawrence Berkeley National Laboratory, has opened its newest supercomputer — a 3,328-processor IBM RS/6000 SP system — to more than 2,000 researchers at national laboratories and universities across the country. The IBM SP, named "Seaborg" in honor of Berkeley Lab Nobel Laureate Glenn Seaborg, is capable of performing five trillion calculations per second (5 teraflop/s).

"Until now, this level of computing power simply has not been available to support research across a broad range of computational science," said Berkeley Lab Director Charles Shank. "As of today, however, scientists who are researching global climate change, explor-

ing how to cut pollution from internal combustion engines, designing power sources for the future and finding new ways to treat disease have a much more powerful tool at their disposal. We fully expect this research to help shape how we live in the future."

The supercomputer is located in Berkeley Lab's new Oakland Scientific Facility in downtown Oakland. The new IBM SP boasts the computing power of more than one million desktop PCs, all able to work together to tackle some of the world's toughest scientific problems.

After thorough testing to ensure it met the rigorous demands of 24-by-7 operation, NERSC's IBM SP was opened to DOE's research community in late August. Soon afterward, scientists around the country began using its power to make important gains in studying complex problems.

"Serving up a lot of computing horsepower is only part of the computational science equation," said Horst Simon, director of the NERSC Division at Berkeley Lab. "The real measure of our success as a supercomputing center is the level of

science our research community is able to achieve using our resources. We're very excited by the results already being reported and are looking forward to even greater accomplishments."

Early users of the IBM supercomputer have already reported important scientific results in astrophysics, climate research and materials science. Teams have been working on projects such as the Nature of the Universe, High Resolution Global Climate Modeling and Better Understanding of Magnetic Forces.

NERSC is the DOE's flagship center for unclassified computing. For information about NERSC, visit <<http://www.nersc.gov>>. Berkeley Lab is a DOE national laboratory located in Berkeley, California. The Laboratory conducts only unclassified scientific research and is managed by the University of California. Visit the Lab's Web site at <<http://www.lbl.gov>>.

Throw Another Rock on the Fire

Pacific Northwest National Laboratory researchers have joined with scientists worldwide in a collaborative effort to pursue a massive energy reserve that, by itself, could keep America powered into the next century. But, retrieving that resource poses quite a challenge. In fact, it's trapped within rock three-quarters of a mile below Alaska and Canada's frozen tundra, and in offshore locations scattered around America's coastline.

Early next year, PNNL researchers will obtain frozen core samples from the MacKenzie Delta in Canada that contain methane gas trapped in an ice-like substance called gas hydrate. These 'rock



gas' samples from the Mallik Research Well may unlock clues to future U.S. energy independence if a safe and economical harvesting process can be perfected.

Contact: PNNL Media Relations
(509) 375-3776

Ice-like gas hydrate trapped within rock deep below the Earth's surface may hold promise for new energy

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widely accepted by Rescue Professionals for their use as well as the general public. This is where the Navy and others are being solicited to help.

The simplicity of the Retriever's appearance belies the extent of the effort it has taken to arrive at the current generation device. Feedback from professionals throughout the rescue community exposed to the device has been critical to the evolution of our device from the crude prototype to the current generation device that has seen the project's worse critics turn into ardent supporters. During this process, a number of dual use applications where our device provides options otherwise not available, were identified. Our final hurdle remains how to improve our current generation tool from one that is well received by professionals who have little difficulty deploying the device due to their physical conditioning and training, to one more suitable for widespread use by the public.

The Retriever Project hopes that by entering into a CRADA with the Naval Air Weapons Center Point Mugu, the Personal Retriever can quickly be refined to the level necessary to be used effectively by a grandparent, a child or a pregnant mom witnessing the drowning of a loved one. To achieve this goal performance gains of 10-15% will be required by determining the optimal design of the device leading/trailing edges through analysis of the laminar flow over a rotat-

ing disc as opposed to a fixed wing; and how to best create and exploit micro vortices along the surfaces of the device.

The long-range vision is to improve and test the device and then develop mass production capability for countries around the world, countries where rescue resources are scarce to non-existent. Project financial and physical limitations have made progress to date slow. Cooperative support from the Navy will provide the expertise necessary to accelerate the development work to move the device to a commercial reality.

The improved design will keep rescue professionals safe during drowning interventions. With government support, the Personal Retriever may become the first generation of rescue devices with a level of performance suitable to provide our national policy makers the means of equipping the general population with a solution to this historic loss of life. What has kept the Search & Rescue professionals committed is the sense of reward and satisfaction that comes from knowing there are people still on the surface and breathing because of a good team effort.

To provide input or for additional information, contact the Retriever Project at 619-222-3467 or visit their website - www.life-safer.com

NASA & a Better Glass Of Wine

NASA researchers are helping growers improve wine quality by using remote-sensing technology to scan vineyards from high above California. Scientists are using images taken from airplanes and satellites to map vineyard leaf area to help vintners measure ripening rate, disease incidence, soil drainage and fruit quality.

"For hundreds of years, winegrowers have known that grapes harvested from different areas in their vineyards can produce wines with unique flavors and tastes," said Tim Mondavi, winegrower and vice-chairman of Robert Mondavi Winery, Oakville, Calif. "We are now using NASA's advanced remote-sensing technologies to understand the subtle nuances of our vineyards, and with astounding results."

Researchers divided groups of vines in the study area into high-, moderate- and low-vigor areas, which have unique flavors and levels of grape maturity, allow-

ing for different styles of wine. Results of the study confirm that the low- and moderate-vigor areas produced higher quality wines, while the high-vigor area produced medium quality wine. The winery has engaged a commercial remote-sensing vendor for 'decision support' across its Napa properties, the researchers said. Scientists also measured light levels, water status, chlorophyll and other factors on the ground.

"In certain regions of France, grapes have been grown for more than 1,700 years. Vintners in these regions have had abundant time to understand how vintage varies throughout the vineyard," explained principal investigator Lee Johnson, a research scientist at NASA's Ames Research Center in California's Silicon Valley. "By contrast, the majority of vineyard development in California's Napa Valley has occurred since the mid-1960s." Until now, Napa vintners generally have treated large 'blocks' of vines as single units for cul-

tivation and harvest. Remote-sensing imagery allows Robert Mondavi winegrowers to better understand micro-regions within their vineyards. "We now identify vine vigor to see weak and strong areas of growth in the vineyard, then we break up how we harvest," said Daniel Bosch, vineyard technical manager at Robert Mondavi Winery. "We can taste those differences in the grapes at harvest."

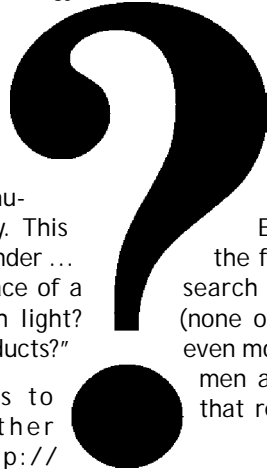
"Winemakers blend wines from different lots to create a desired flavor profile in the final wine," Johnson said. "A greater number of distinct wine lots will provide the winemaker with increased latitude in blending and serve to increase quality."

Additional information about NASA Ames' grapevine studies is on the Internet at: <http://geo.arc.nasa.gov/sge/vintage/vintage.html>

Stimulating Scientific Curiosity

The Department of Energy Lawrence Berkeley National Laboratory's (Berkeley Lab) "Did You Ever Wonder" campaign has entered its third month with a new set of questions aimed at stimulating scientific curiosity. This month: "Did you ever wonder ... how to rebuild the surface of a cell? How to carve with light? What to do about leaky ducts?"

You can find answers to these and many other questions at <http://www.lbl.gov/wonder>



Featuring individual scientists who are investigating intriguing questions of human health, the environment, new technology, and nature's most fundamental principles, "Did You Ever Wonder" conveys the flavor of the diverse research done at Berkeley Lab (none of it classified) and the even more diverse collection of men and women who pursue that research.

Upcoming Events

November 29, 2001

Finding that Second Round of Funding Berkeley Entrepreneur's Forum
Berkeley, CA

Contact: 510-642-4255, or
e-mail lester@haas.berkeley.edu

December 2-4, 2002

AUTM Advanced topics in Licensing; Directors' Forum

Assn. of Univ. Tech. Mgr.
Contact: 847-480-9282

March 12-14, 2002

FLC Far West Regional Meeting

Collocated with the
National SBIR Conference
Anaheim, CA
Contact: 360-683-5742

May 6 - May 10, 2002

FLC National Meeting

Little Rock, AR
Contact: 856-677-7727

Options or views expressed in the FAR WEST

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Send material for consideration to the FLC Far West Support Office at the above address. If you would like this publication sent to any of your local or State organizations/agencies, please send the names and mailing addresses of their points of contact to the Regional Support Office.

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