



T² INSIDE

NASA's Kress Moves Up S&T Ladder **2** page

ARS Saves Industry \$50M per Year **2** page

FLC VC Speaks at Optics East **5** page



T² FACT

In 1977, Raymond Damadian invented the magnetic resonance imaging (MRI) scanner, which has revolutionized the field of diagnostic medicine. The MRI obtains information through the use of static and dynamic magnetic fields, a method that yields radio signal outputs from the body's tissue that can be either transformed into images or analyzed to provide the chemical composition of the tissue being examined. Since the device's approval in 1984 by the FDA, hundreds have been put to use in medical institutions around the world.

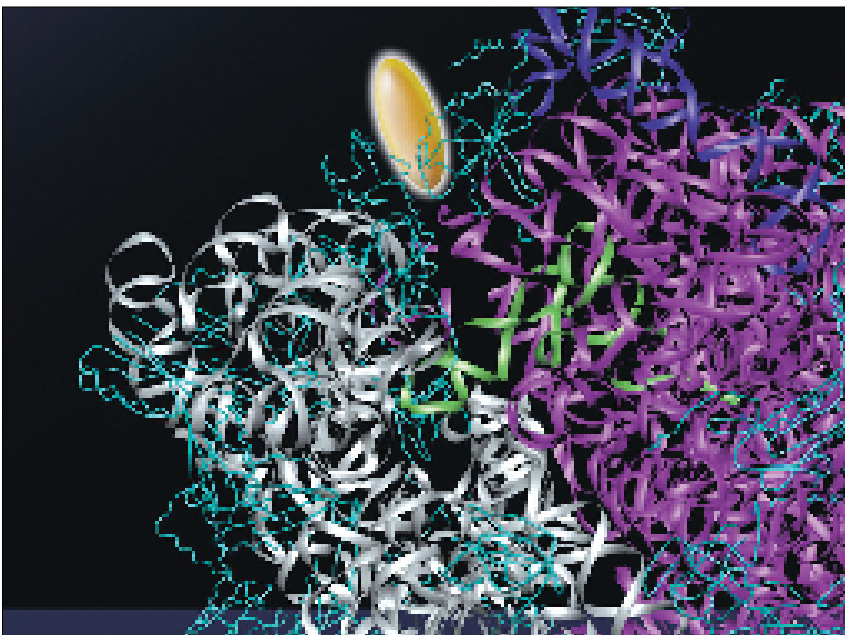
- Mary Bellis, About.com



T² EVENTS

- ISPE 2005 Training Series
Tampa, Fla.
December 5-8, 2005
-
- ATIA 2006 Conference
Orlando, Fla.
January 18-21, 2006
-
- IFPAC 2006
Arlington, Va.
February 20-23, 2006
-
- 2006 AUTM
National Meeting
Orlando, Fla.
March 2-4, 2006
-
- World's Best Technology
Showcase 2006
Arlington, Texas
March 27-29, 2006
-
- SAE 2006
Detroit, Mich.
April 3-7, 2006
-
- BIO 2006
Chicago, Ill.
April 9-12, 2006
-
- FLC National Meeting
Minneapolis, Minn.
May 1-4, 2006

LANL RESEARCHER LAUNCHES BIOTECH COMPANY



A fluorescing drug molecule (glowing gold oval) binds to a protein (twisted and coiled thin teal "rope") within a "ribbon" representation of a bacterial ribosome, a frequent target for antibiotic drugs. This binding of the native drug to a protein molecule would be unambiguously detected by MESA label-free measurement technology.

by Susan Sprake, LANL

Today's high failure rate for drug development—the primary cause of the high cost of new drugs—is driven by the inability to measure more than an infinitesimal number of protein-drug interactions.

That is all about to change with Ben Warner and his company,

Caldera Pharmaceuticals, entering this arena.

Ben Warner of Los Alamos National Laboratory (LANL) won the FLC Mid-Continent 2004 Distinguished Service Award for this technology.

At the time, he had 3 patents and 12 pending. Today, he has

landed \$7 million in equity and debt financing and is ready to launch his company, Caldera Pharmaceuticals, which has an answer to the costly drug development problem.

Caldera has licensed LANL technology known as MESA (measuring enzyme-substrate affinities), which was originally developed by Ben Warner while at LANL. Caldera's technology addresses the core of how many pharmaceuticals work: the binding of chemicals and proteins.

The Caldera system allows researchers to test a single chemical against thousands of proteins at once instead of testing a few chemicals against a single protein at a time. "We can do in eight minutes what others can do in a day," Warner claimed.

Caldera is looking to increase the \$7 million to \$10 million shortly and to set up shop in Los Alamos, N.M., with the expectation of employing up to 100 people.

Warner says his company's proprietary system for testing how proteins bond with

See LANL, page 4

NASA WORKS WITH AEROSPACE CORP. TO DEVELOP SPACE WIRE

by Nicole Quenelle, Fuentek, LLC

Officials from the National Aeronautics and Space Administration (NASA) have entered into a cooperative research agreement with a leading U.S. aerospace corporation to transfer NASA SpaceWire technology and assist the company in modifying the technology to support their own space-flight missions. In return, NASA will have access to the modifications. According to NASA, the agreement is a step toward establishing the SpaceWire communications protocol as a de facto space-flight networking standard—which will save industry and government organizations development time and resources for future missions.

Developed in 1999 under the auspices of the European Space Agency, SpaceWire answered a longstanding space-flight problem: no standard high-speed communications protocol existed for flight electronics. Therefore, all space-flight electronic payloads (such as processing units, onboard computers, etc.) were custom designed on a project-by-project basis, resulting in long development periods, high costs and elevated

See SpaceWire Tech, page 4

FAA'S WILLIAM J. HUGHES TECHNICAL CENTER ANNOUNCES CRADA AWARD

by Deborah Germak, Federal Aviation Administration

The Federal Aviation Administration (FAA) William J. Hughes Technical Center (WJHTC) has entered into a Cooperative Research and Development Agreement (CRADA) with HRWorX, LLC, a privately held software development company located in Herndon, Va.

The FAA Regional Counsel for the Eastern Region developed a software product that automates

the annual process of collecting and reviewing Standard Form (SF) OGE-450, Confidential Financial Disclosure Form, and SF OGE-450A, Statement of No New Interests. These are forms required to be filed by thousands of FAA employees and government employees throughout the executive branch. The process follows the general principles of ethical conduct for government

officers and employees and conflict of interest laws pursuant to the guidelines of the United States Office of Governmentwide Ethics.

This CRADA establishes a partnership to maintain the application's currency (relative to any changes in relevant laws or regulations), add functionalities to enhance the

See FAA CRADA, page 4

DC ON T²

by Gary Jones
FLC Washington, DC Representative



Hello and greetings from DC. For my initial News-Link column as the FLC Washington, DC Representative, I wanted to report on a topic of wide-ranging interest to many in the science and technology community—one

that is gaining attention on the Hill and with potential policy implications for some of our FLC members.

Based on a review of relevant trends in the U.S. and abroad, the National Academy of Sciences (NAS) recently noted that it is "deeply concerned that the scientific and technical building blocks of our economic leadership are eroding at a time when many

See DC on T², page 5

AIR FORCE COLLABORATES WITH WESTONE

Is the earpiece that Carlos Santana wears when he sings "Black Magic Woman" really the same technology used by U.S. Air Force fighter pilots? Well, almost... thanks to a unique collaboration between the federal government and a commercial hearing healthcare laboratory.

This project by the Air Force Research Laboratory's Human Effectiveness Directorate (AFRL/HE) began with earpiece technology from Westone Laboratories, Inc. Westone is widely recognized as the industry leader in hearing healthcare products, including in-ear music monitoring devices used by Santana and other top recording artists.

Using the Westone technology as a baseline, AFRL/HE developed the Attenuating Custom Communications Earpiece System (ACCES), which improves hearing protection and communications not only for military ground crews and pilots, but for industrial workers such as construction crews, heavy equipment opera-



This initial version of the ACCES system was tested aboard the F/A-22 Raptor and is the version that Mike Melwill, pilot of the rocket plane SpaceShipOne, wore during his 2004 flight.

tors and commercial airline employees.

By integrating specialized electronics and a voice communications cable into a custom-molded earpiece, the technology allows the user to receive clear communications while simultaneously

See AFRL and Westone, page 5

FED LABS FLASH | TECHNOLOGY TRANSFER NOTES

PNNL COLLABORATES FOR PROSTATE CANCER RESEARCH

Over 90 men with prostate cancer have received an innovative radioisotope treatment thanks to collaborative research between Pacific Northwest National Laboratory (PNNL) and IsoRay Medical, Inc.

The two organizations developed a brachytherapy seed using cesium-131. The first cesium-131 seed implant was performed in October 2004 at the University of Washington Medical Center.

"PNNL is very excited to be part of this effort. It is extremely satisfying to staff to realize that their work may provide a life-saving cancer treatment to patients with prostate cancer," said PNNL Project Manager Lawrence Greenwood.

Prostate cancer is one of the leading causes of death among men.

Around 230,000 men will be diagnosed with prostate cancer this year in the United States, and nearly 30,000 die annually.

IsoRay received U.S. Food and Drug Administration approval to market cesium-131 for treatment of prostate cancer and other malignancies in March 2003.

"Prostate cancer is usually a slow growing cancer," said Greenwood. "Doctors have time to inject the seeds and then closely monitor the patient."

Although IsoRay is marketing the cesium-filled seeds for prostate cancer therapy, the FDA has approved cesium-131 for the treatment of other forms of cancer, including breast, brain, liver, head and neck cancers, and other malignant diseases.

PNNL began working with IsoRay in 2000. IsoRay had a process that efficiently produced ultra pure cesium-131.

PNNL and IsoRay developed and refined the manufacturing process, which deposits the cesium-131 onto a ceramic core, inserts the core into titanium capsules, and seals the capsule with laser welding.

"IsoRay selected PNNL because of our experience and expertise in working with radioisotopes," said Process and Measurement Technology Product Line Manager Wally Weimer.

More info: Larry Greenwood, 509-376-6918, larry.greenwood@pnl.gov; or Walter Weimer, 509-375-6922, walter.weimer@pnl.gov

NASA APPOINTS NEW DIRECTOR



Martin Kress, NASA

Martin Kress, a former deputy director at NASA's Glenn Research Center in Cleveland, has been named executive director of the National Space Science and Technology Center in Huntsville, Ala. Founded in 2000, the center is jointly operated by NASA's Marshall Space Flight Center in Huntsville and the Alabama Space Science and Technology Alliance, a consortium of state research universities. Researchers at the science facility conduct cutting-edge scientific study in various disciplines, including earth science, atmospheric science and climatology, space science, optics, and information technology development.

The center also fosters the education of future generations of scientists and engineers, and supports educators at the elementary and secondary levels through science-related programs, workshops, and curricula support.

Kress most recently was vice president and relationship manager of the NASA/Space Group with the National Security Division of Battelle Science and Technology International in Columbus, Ohio. Battelle is a global, not-for-profit research enterprise that develops and commercializes technologies and manages laboratories nationwide.

The challenge of operating an innovative science and technology institute and helping expand its portfolio of research and activities is what motivated Kress to join the Huntsville science center, he said.

BAUER TO LEAD NATIONAL ENERGY LAB

The Department of Energy (DOE) has named Carl O. Bauer as director of the National Energy Technology Laboratory (NETL), a national laboratory under the federal operation of the DOE. Bauer succeeds Rita Bajura, who retired from the post in February 2005.

As director, Bauer manages approximately 1,200 federal and contractor staff in four NETL locations—Pittsburgh, Pa.; Morgantown, W.Va.; Tulsa, Okla.; and Fairbanks, Alaska.

"The National Energy Technology Lab is one of our most important means to advance research and technology in several professional arenas, including President Bush's Clean Coal Initiative and Carbon Sequestration," said Secretary of Energy Samuel Bodman. "Carl has more than 30 years' experience in both the public and private sectors and has demonstrated his ability to continue the fossil energy mission of NETL and to assume the directorship of one of the department's most important national labs. I look forward to NETL's continued success under Carl's leadership."

The lab's mission is to develop new technologies and approaches that will ensure the safe, clean, and affordable use of U.S. fossil energy resources through the 21st century.

NETL accomplishes that task by developing and implementing a research and development program to resolve the challenges of producing and using fossil resources, including any environmental impacts.

Bauer has served as acting director of NETL since February 2005, after serving as deputy director from October 2003. He has also served in other capacities at NETL, including director of the Office of Coal and Environmental Systems, where he led efforts in coal and environmental research, and as director of the Office of Product Management for Environmental Management.

ARS PROTECTS CATFISH, SAVES INDUSTRY \$50M PER YEAR

by Tara Weaver-Missick, Agricultural Research Service

ARS researchers developed two modified live vaccines to prevent enteric septicemia and columnaris—major diseases in channel catfish. Both diseases together cost the U.S. catfish industry \$50-70 million annually. In 2003 alone, the catfish industry reported the diseases in about 50 percent of all catfish operations. These pathogens are responsible for severe disease outbreaks throughout the catfish industry every year. The two diseases are caused by *Edwardsiella ictalari* (*E. ictaluri*) and *Flavobacterium columnare* (*F. columnare*), two bacterial pathogens that infect catfish of all sizes. Previous studies suggested that killed vaccines against both *E. ictaluri* and *F. columnare* were not effective when administered by immersions at the hatchery (i.e., mass immunization). ARS researchers modified both bacteria, preventing bacteria that may come into contact with the fish from infecting the fish and causing disease. The researchers used this to create a modified live vaccine, eliminating many of the problems associated with killed vaccines—the need for injecting each fish, the high cost of administering a vaccine, the stress to the fish, and the lack of lifetime protection. The ARS-developed modified live vaccines are administered by bath immersion, a nonstressful and inexpensive process. This technique allows for treatment of large numbers of young fish, and it also provides lifelong protection.

Both vaccines were developed under a CRADA with Intervet, Inc., of Millsboro, Del., and are exclusively licensed to Intervet. The enteric septicemia vaccine



ARS aquatic pathologist Joyce Evans injects a fish with a vaccine.

(AQUAVAC-ESCTM) was first introduced in 2001.

According to Intervet, the total benefit to producers from using this vaccine alone is almost \$2,000 per acre due to improved survivability and faster growing catfish that yield greater lengths over nonvaccinated catfish. Since AQUAVAC-ESC's release, almost one billion fish fry have been vaccinated. AQUAVAC-COLTM, the first effective vaccine against columnaris disease in the world, was launched in 2005, and the 2005 production is sold out.

These two modified live vaccines are a trend-setting advancement for the rest of the world in fish vaccinology.

Used in combination, they provide fish farmers with a cost-effective means for preventing the two most economically serious diseases in commercial pond-raised catfish. AQUAVAC-ESC

and AQUAVAC-COL are both administered via bath immersion at 7 days post-hatch to prevent disease losses. Other benefits of using these vaccines include increased catfish yields due to improved growth and survival.

In addition, these vaccines significantly reduce the need for antibiotics, thus decreasing environmental contamination and providing a safe fish product for consumers. With some 180,000 acres of ponds in catfish production, the potential economic benefit of these vaccines approaches \$50 million annually.

More info: Don Nordlund, 706-546-3496, dnordlund@saa.ars.usda.gov; or Tara Weaver-Missick, 301-504-6965, twm@ars.usda.gov

FLC NEWSLINK

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TECH WATCH | LABORATORY TECHS READY FOR TRANSFER

SAVANNAH RIVER NATIONAL LAB DEVELOPS TECH TO CUT COST FOR GROUNDWATER REMEDIATION INDUSTRY

The Savannah River National Laboratory has developed a subsurface remediation tool called the MicroBlower.

The MicroBlower uses a small, low-power vacuum blower to extract or inject gases into the subsurface for characterization or remediation.

Because the components of the system have a long operating life, the system is useful for long-term clean-up operations, particularly where mass transfer limits the rate of remediation. The unit can be powered by small batteries, small photovoltaic panels, or wind generators.

The MicroBlower addresses the following considerations for long-term remediation systems.

- **Pumping:** The pump is capable of producing environmentally relevant flows (i.e., greater than 1 scfm) at pressures or vacuums typical of subsurface situations.

- **Power:** The system requires only 20 to 40 watts of power, which can be easily produced by a small photovoltaic panel.

- **Size:** The pumps in the system are small and unobtrusive for long-term operations (4 inches high and 3 inches in diameter).

- **Reliability:** The mean time between failures for the pumps is on the order of 15,000 to 20,000 hours.

Applications

The MicroBlower enables the use of simple, low-cost soil vapor extraction in shallower areas than previously considered possible.

Perhaps the greatest potential for the MicroBlower is in treatment polishing of an area treated by an expensive, large blower system that still has residual contamination. Installation of an economical MicroBlower system to finish the cleanup at greatly reduced costs allows larger

systems to be used where they can produce greater returns.

The MicroBlower also can remediate sites that are smaller than the capacity of typical, large blower systems.

Benefits/Advantages

This technology has the potential to offer significant cost savings to the groundwater remediation industry. Presently, there are no regulations concerning the contaminants in the vadose zone. Responsible parties tend to remediate groundwater and ignore the vadose zone.

However, if the vadose zone is not remediated, contamination will migrate downward and recontaminate the groundwater. With the groundwater no longer in compliance, the responsible parties must bear the cost of remediating the groundwater again. By installing the MicroBlower, the risk of the groundwater being re-

contaminated from the vadose zone would be alleviated.

More Info: John Olschon, License Associate, john.olschon@srnl.doe.gov, Westinghouse Savannah River Company, Building 773-41A, Room 239, Aiken, SC 29808, 803-725-8125

LIVERMORE SEEKS LICENSEE TO COMMERCIALIZE SHAPE MEMORY POLYMER

Lawrence Livermore National Laboratory (LLNL), operated by the University of California under contract with the Department of Energy (DOE), wants to license new shape memory polymers (SMP) with material properties that exceed those of current SMPs.

LLNL's new SMP compositions have mechanical properties that bridge the gap between shape memory alloys (SMAs) and the current crop of SMPs.

SMPs belong to a category of products known as smart or intelligent materials that have the ability to change size and shape in response to changes in temperature, moisture, pH, or electric and magnetic fields. For SMPs, it is temperature. Using a temperature-dependent process, these polymers can be formed into any shape, reformed into a stable secondary shape, and when stimulated regain the previous "memory" shape to achieve its function. These materials have variable structure or composition depending on the application.

Although the market is dominated by SMAs, LLNL has developed new SMP compositions with mechanical properties that bridge the gap between SMAs and the current crop of SMPs. Specifically, these new polymers have higher recoverable stresses than existing commercial SMPs, have superior clarity for optical applications, and still have larger recoverable strains than SMAs to build devices with highly complex shapes. These new SMPs can also be made biodegradable.

Companies interested in commercializing this technology should provide a written statement of interest that must include a description of corporate capability and experience relevant to this technology.

More info: 925-422-6416, www.llnl.gov

LBNL'S MICROGELS FOR VACCINE AND CYTOPLASMIC DRUG DELIVERY

Miquel Salmeron and his colleagues at Lawrence Berkeley National Lab (LBNL) have modified non-contact atomic force microscopy to develop a scanning polarization force microscope (SPFM) that can image liquids and very weakly bound materials at nanometer scales.

The novel feature of this patented instrument is that it minimizes the interaction between the microscope tip and the sample surface.

Now ultrasmall particles such as dust and contamination, nanometer liquid films, and nanosize liquid droplets can be imaged at scales never before achieved. Electron microscopes destroy these types of samples and are also unable to image insulating substrates.

Conventional atomic force microscopes brush away or wick liquid or weakly bound samples. Optical microscopes lack the resolution for nanoscale imaging.

LBNL's SPFM measures and maps the electric field from the electrostatic charges in materials as well as induced molecular and atomic polarization fields.

This invention is useful for imaging dielectric and insulator substrates and metal surfaces, including contamination in semiconductor processing. It will also find application in the study of biomaterials and biological systems.

Applications of Technology

- Detection of contamination in semiconductor processing
- Detection of liquid films affecting wetting and adhesion on surfaces
- Imaging of liquids interacting with organic material in biological systems
- Characterization of biomaterials
 - Hydrophilic and hydrophobic regions
 - Areas of different ionic concentration

Advantages

- First microscope to enable nanoscale imaging of very weakly bound materials on solid or liquid surfaces
- Minimizes interaction between microscope and surface
- Works with samples of any thickness
- Lateral resolution of ~ 50 nm, vertical resolution of ~ 0.1 nm

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



MINNEAPOLIS, MINNESOTA MAY 1-4, 2006

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From fundamentals, to intermediate, to advanced, this year's FLC national meeting boasts a full day of technology and commercialization training with subject-matter experts, panel discussions, and interactive sessions.

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Be part of the celebration when the FLC unveils its newest technology transfer standouts with the prestigious FLC Awards for Excellence in Technology Transfer.

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More info: Rachel Berkowitz • 856-667-6770 • rberkowitz@utrs.com • www.federallabs.org



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FLC VICE-CHAIR SPEAKS AT OPTICS EAST

On October 25-26, the FLC took part in Optics East 2005 in Boston, Mass. Optics East, run by the International Society of Optical Engineering (SPIE), focuses on sensors and photonics for applications in industry, life sciences, and communications.

The FLC was one of 130 exhibitors exhibiting to over 1600 attendees. Attendees were pleased to learn about the many ways to collaborate with the federal laboratory system, specifically in locating technologies and using laboratory facilities for testing their technologies.



FLC Vice-Chair Susan Sprake discusses federal technology transfer with attendees of Optics East 2005 in Boston, Mass.

FLC Vice-Chair Susan Sprake delivered a presentation on the various ways the FLC could serve as a conduit for connecting industry to federal laboratories.

Sprake also discussed the new and innovative technologies coming out of federal laboratories and stressed that with the help of subject-matter experts within the FLC, industry questions or concerns about working with the federal labs can be mitigated through competent dialogue.

Examples were given of federal lab technologies that can be found in the burgeoning field of optics.

37 Model Technology Assessment and Partnership Opportunities

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AFRL and Westone, from page 1

protecting the ear from damaging audio frequencies above 85 dB sound pressure level (SPL). ACCES reduces noise by 40 dB. It weighs less than the hard-plastic speakers mounted inside flight helmets, and is cost-effective at less than \$300 per set, depending upon the application. Flight evaluations show that ACCES is comfortable and provides a quieter environment inside a jet.

John Hall, AFRL/HE Science & Technology lead for acoustic signal control, said the program has leveraged a commercial industry for transition to a military application, and the value-added technology is now being transferred to other commercial applications. "We partnered with a small business and developed cool technology" for both military and commercial markets, Hall said.

According to Hall, the Air Combat Command recently approved ACCES for use in F/A-22, F-15, F-16 and A-10 aircraft. Previously, pilots and ground crews wore foam earplugs under their communication headsets, which caused problems because the foam plugs muffled all external noise, including important communications.

In September 2005, the General Services Administration (GSA) awarded



This is the ruggedized version of the ACCES system, shown complete with earplugs and associated cables/electronics.

Westone a GSA schedule contract, which allows Westone to market and sell the product directly to military and commercial customers.

"This is a landmark example of technology transfer facilitating transition of products to the warfighter," said Augustine Vu, Air Force technology transfer program manager.

AFRL initiated the research upon learning that the Veterans Administration treatment of hearing loss

has cost taxpayers more than \$5.9 billion since 1977. Air Force maintenance crews also reported problems communicating with each other and with pilots when jet engines are in higher power settings.

For Westone, the potential exists to create a new commercial product line with possible applications in the automotive, motorsports and airline industries. The Air Force already has realized the potential for this product in military flight and ground applications.

Mike Melvill, pilot of the rocket plane SpaceShipOne, wore ACCES during his 2004 flight. Melvill said he "couldn't have heard anything" without the ACCES technology. Cabin noise reached levels of 120 dB, but Melvill said his communications with mission control were "perfect" and he had "no discomfort at all from the noise of the rocket motor."

Future improvements could include microphones for two-way communi-

cations and "anti-noise" for improved noise suppression.

The Air Force Research Laboratory is headquartered at Wright-Patterson Air Force Base, Ohio. AFRL's mission is leading the discovery, development, and integration of affordable warfighting technologies for Air Force air and space forces.

It is a full-spectrum laboratory, responsible for planning and executing the Air Force's entire science and technology budget, basic research, applied research, and advanced technology development.

The Human Effectiveness Directorate is one of 10 AFRL technical directorates.

Its mission is to lead revolutionary science and technology for superior airman cognition, readiness, performance, and survival. AFRL/HE is the only Air Force operation that performs nonmedical research on human subjects to protect and support the men and women serving in the United States military.

The directorate is a 1,200-person research and development organization headquartered at Wright-Patterson Air Force Base, with operating locations at Brooks City-Base, San Antonio, Texas; and the Mesa Research Site, Mesa, Ariz.

DC on T², from page 1

other nations are gathering strength," ... and that for the U.S. to compete in a global environment characterized by low-wage competition, we must compete by "optimizing [our] knowledge-based resources, particularly in science and technology..."

These are the overarching findings of an NAS report released October 12, titled "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Future."

The report was prepared at the request of the Senate Committee on Energy and Natural Resources, with endorsement by the House Committee on Science. A well-attended hearing was also held October 20 by the House Committee on Science to discuss this topic, with testimony by senior participants in the study.

The NAS was asked to identify and prioritize those actions that federal policy makers should take to enhance the U.S. science and technology enterprise for the U.S. to successfully "compete, prosper and be secure in the global community of the 21st Century."

To accomplish this goal, against the backdrop of the noted findings, the report sets out four broad recommendations with 20 underlying and supporting action items. The report recommends:

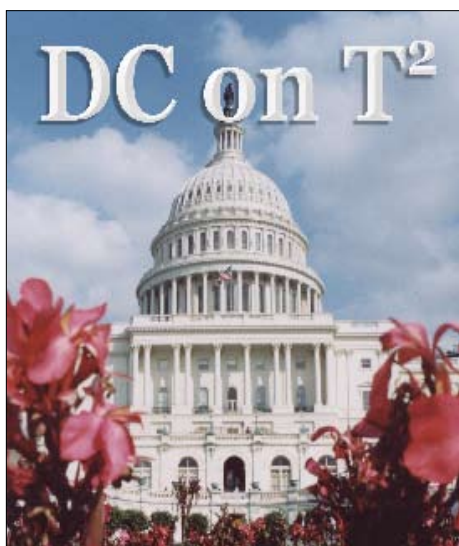
1. Increasing America's talent pool by vastly improving K-12 science and mathematics education.

2. Sustaining and strengthening the nation's traditional commitment to long-term basic research.

3. Making the U.S. the most attractive setting in which to study and perform research.

4. Ensuring that the U.S. is the premier place in the world to innovate.

The devil is in the details, of course, which in this case means the 20 focused proposed actions designed to support the broader recommendations.



As was noted in the hearing, while these general recommendations are not new to the science policy community, some of the underlying actions provide novel approaches to moving the discussion forward.

These actions range from methods to recruit quality teachers and students to the sciences to the use of budgetary means for increasing basic research and tax incentives to spur innovation

in the private sector. Additionally, the report also calls for organizational and institutional changes, like developing a National Coordination Office for Research Infrastructure and creating a DARPA-esque organization within the Department of Energy, as well as revising the U.S. intellectual property protection system and the current visa situation for foreign students, among others.

The report's admittedly "back of the envelope" cost estimate for these actions ranges from \$9.2 to \$23.8 billion per year.

It remains to be seen what the outcome of this report will be on public policy in the science and technology area.

But given its origins, the dramatic tone of the underlying findings, the attention it's getting on the Hill, and the scope of the recommendations/action items, it's reasonable to suggest policy makers will give it serious consideration.

The FLC community should continue to monitor the progress of this report and the related policy actions for both potential impacts to current operations and for opportunities to be involved in implementing any resulting policy initiatives.

The report can be downloaded from <http://www.nap.edu/catalog/11463.html>.

You can contact Gary at 703-414-5026 and at gkjones@flcdc.cnchost.com.

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JONES TAKES OVER AS FLC WASH., DC REPRESENTATIVE

Gary K. Jones, in his capacity as Washington, DC Representative, is responsible for providing FLC coordination in the D.C. area with federal agencies and their laboratories; congressional staff; and trade, professional and other organizations. He brings more than 23 years of professional experience to his current position, including 7 years in academia and over 16 years in industry and government.

Most recently, from 2000 until 2005, Mr. Jones was on the faculty of American University's Washington Semester Program, where he served as an Academic Director for Inter-

national Business & Trade. One of his signature responsibilities was to develop strong ties to Washington business, government and institutions to establish opportunities for his students to engage senior policy makers on a range of international business topics.

He also has lectured on global R&D management issues in the George Washington University graduate business program, and served as an adjunct faculty member at University of Maryland University College, Graduate School of Management & Technology—where he received the annual Teaching Excellence Award

in 2000 for his "Principles of Technology Management" course.

Prior to his academic experience, Mr. Jones' career included work as an exploration geophysicist in the energy industry, a policy analyst supporting the Department of Energy, and a researcher with the Virginia Department of Economic Development. In addition to his professional experience, he has conducted research on global R&D issues, and presented at national and international conferences.

His research has been published in technology and management academic journals such as *Management*

International Review, Journal of Business Venturing, Multinational Business Review, and the International Journal of Technology Management.

He holds an M.B.A from the University of Richmond, a B.S. in Geophysics from Virginia Polytechnic Institute and State University, and he has studied technology management and international business at the post-graduate level.

He and his wife live in Silver Spring, Md., where they enjoy hiking, biking, and many other cultural activities available in the Washington, D.C. area.

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