July

FLC NewsLink

2004

A Publication of the Federal Laboratory Consortium for Technology Transfer

I N S I D E

T² F A C T

Italian scientist Galileo Galilei is credited with first using a telescope to advance astronomy in 1609. Galileo was the first man to document moon craters, the moons of Jupiter, and Saturn's rings. His telescope arranged glass in a way that magnified distant objects up to 30 times.

T² E V E N T S

World Future Society
Washington, D.C.
July 31- Aug. 2, 2004

•

FLC Midwest Regional Meeting
Cleveland, Ohio
August 2-4, 2004

•

FLC Northeast Region SBIR/STTR Workshop
Salem, Mass.
August 4, 2004

•

FLC Northeast Regional Meeting
Salem, Mass.
August 5-6, 2004

•

FLC Mid-Atlantic Regional Meeting
Flintstone, Md.
Sept. 14-16, 2004

•

T² Society
Emerging Issues in T²
Albany, New York
Sept. 29-Oct 1, 2004

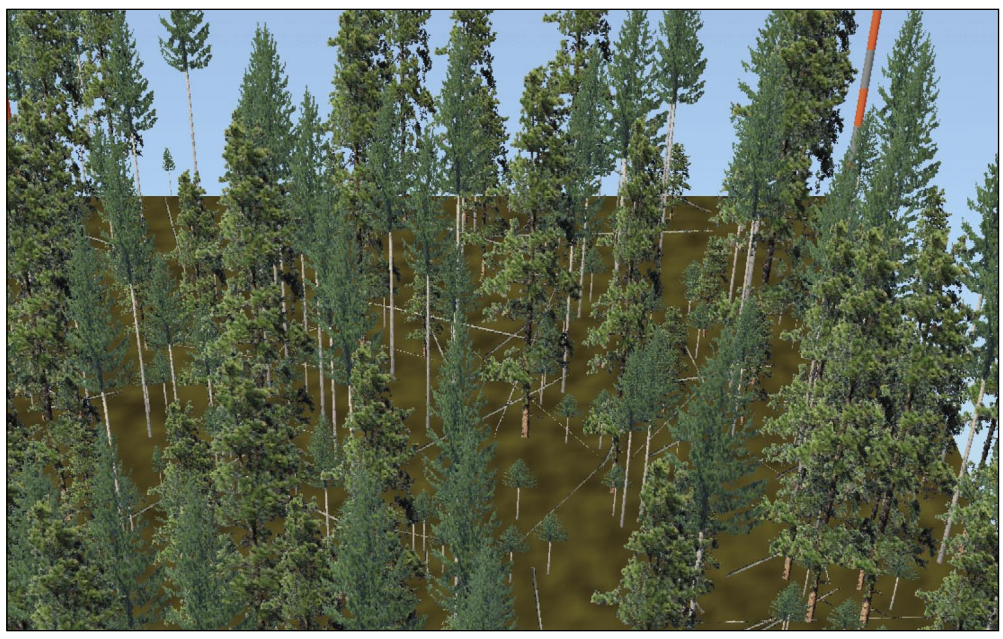
Forest Service Forecasts Forest Future

Few people, even forestry professionals, can look at a data table describing the trees in a forest stand and visualize what it tells them. It is even harder to visualize how that stand or landscape would look in the future if it were managed in different ways.

Scientists at the **USDA Forest Service Pacific Northwest** (PNW) Research Station developed a visualization system for forests. EnVision creates graphic images of forests, accurately showing forest growth and development, fuel and fire hazard conditions, and alternative forest management activities.

"Numbers describing forest conditions are difficult for some people to understand," explained Bob McGaughey, research forester at PNW Research Station. "Today people are more visually oriented."

EnVision uses data from different sources — including forest inventory databases, digital terrain models that represent the ground surface, stand growth models, and landscape projection systems — to produce visual simulations of forest conditions and management alternatives. The program can be used at multiple scales to visualize areas from less than 1 acre up to an entire landscape.



Forest Service Pacific Northwest's EnVision technology creates graphic images of forests, accurately showing forest growth and development, fuel and fire hazard conditions, and alternative forest management activities.

A recent enhancement to EnVision uses the fire and fuel effects extension of the Forest Service's forest vegetation simulator (FVS) to help users portray the heavy fuel loads of dead and down trees in western forests, and also to show the potential effects of fire on these forests. EnVision simulates how these forests would look after fires of different severities.

The visualizations help communicate the high fire risk of overcrowded forests and the effects of fuel-reduction treatments.

Perhaps the most powerful use of EnVision has been to help break deadlocks in debates about forest management. State, private, and federal foresters use EnVision graphics to explain forest dynamics and management scenarios to people. Public involvement is more effective when people understand the consequences of different management alternatives.

"Conflict is reduced because people better understand the implications of a set of numbers," said McGaughey.

"You have more involvement, more

See FS EnVision, page 4

EPA, Industry Keep Water Safe

The U.S. Environmental Protection Agency's (EPA) **National Homeland Security Research Center**, **U.S. Army Edgewood Chemical and Biological Center** (ECBC) and STERIS Corporation are developing the next phase of tools designed to detect and remove chemical and biological agents from the nation's drinking water supply and buildings.

Two technologies — a water test loop facility and a modified vaporous hydrogen peroxide (VHP) decontamination system — were demonstrated during a congressional briefing attended by Senator George Voinovich, Representative Ben Cardin, Representative Roscoe Bartlett, Representative Dutch Ruppersberger and EPA Assistant Administrator

See EPA collaboration, page 4

Tech Admin. Changes

by Dave Appler
FLC DC Representative

The Technology Administration at the Commerce Department is the lead agency for technology transfer policy.

There are several changes in the works that I thought you might like to know about.

Ben Wu has been nominated for the position of Assistant Secretary for Technology Policy. He is taking the position previously held by Bruce Mehlman. Mr. Wu had his initial confirmation hearing

See Tech Admin. Changes, page 4

DC on T²

by Neil MacDonald
Federal Technology Watch

The contributions of science, technology and innovation to economic development at local, state and national levels were examined in the 2004 National Economic Development Conference, cohosted by the Economic Development Administration (EDA) and the Council on Competitiveness.

Under a theme of "The Innovation Imperative: Translating Ideas into Prosperity," Commerce Assistant Secretary for Economic Development David Sampson and Council President Deborah Wince-Smith offered examples of important contributions that science and technology (s&t) and innovation have made to U.S. economic growth during the past 25 years.

"The event is an opportunity for us to really learn what's on at the cutting-edge of economic development thought and practice," Sampson said in his introductory re-

See DC Dispatch, page 5

Arthritis Hurts, Cherries Help

Agricultural Research Service Chemist Darshan Kelley (left) and Adel Kader, professor at the University of California, Davis, examine and weigh cherries.

by Marcia Wood, ARS Information Staff

Results of a preliminary study by **Agricultural Research Service** (ARS) scientists and their university colleagues suggest that some natural compounds in plump, juicy Bing cherries may reduce painful arthritic inflammation. Eating cherries may also help lessen the severity of other inflammatory conditions, such as cardiovascular disease or cancer.

Cherries already have a reputation for fighting inflammation. So what's new about the ARS study?

"Our test is among the first to track anti-inflammatory effects of fresh Bing cherries in a controlled experiment with healthy volunteers," said chemist Robert A. Jacob, who led the investigation. Jacob is now retired from the ARS Western Human Nutrition Research Center in Davis, Calif.

In previous studies at other laboratories, scientists analyzed extracts from sweet or tart cherries in vitro to learn more about the fruit's potential health-promoting properties. In contrast to these test-tube experiments, the California study is apparently the first to test key inflammatory disease indicators, or

See Arthritis Cherries , page 4

Fed Labs Flash

Technology Transfer Notes

PNNL Scientist Leads ASTM

Gary Smith

Gary L. Smith, a staff scientist at the Department of Energy's **Pacific Northwest National Laboratory**, has been appointed chair of the ASTM International Committee C26 on Nuclear Fuel Cycle.

ASTM International (www.astm.org) is one of the largest standards development and delivery organizations in the world. Its standards are recognized and used in research and development, product testing, quality systems and commercial transactions.

This prominent and influential committee develops standards important to work done on the nuclear fuel cycle, including spent nuclear fuel, waste materials, and repository waste packaging and storage. Smith also was honored with the Harlan J. Anderson Award, which is presented annually to a member of C26 who has made outstanding contributions toward the successful operation of the Committee.

Smith has more than 23 years of experience in the fields of ceramics and material science and engineering. For the last 10 years he has been working primarily in nuclear waste and vitrification. He has written over 50 publications and co-edited three Ceramic Transactions volumes published by the American Ceramic Society.

Smith, currently assigned to the Hanford Waste Treatment Plant near Richland, ensures that development and use of simulants is coordinated, consistent and defensible across the project and into commissioning.

U.S., Poland Tech Exchange

More international collaboration on next-generation biodefense technologies will emerge from the U.S. Army **Edgewood Chemical Biological Center** (ECBC) with the signing of a data exchange annex, or DEA, with its counterparts in the Polish biological defense community. Col. Marek Janiak of Poland's Military Institute of Hygiene and Epidemiology and ECBC Technical Director **Jim Zarzycki** signed the agreement in a ceremony at ECBC on the Edgewood Area of Aberdeen Proving Ground, Md., on Friday, May 21, 2004. This agreement continues the 10-year-long partnership between the two organizations.

During their visit to ECBC, representatives from the Polish Military Institute of Hygiene and Epidemiology met with a wide range of ECBC personnel and discussed the center's work in its key mission areas. Biotechnology and biological defense were the focus of the delegation. The group reviewed the center's latest efforts in biosensors, biological forensics and analysis, and triage of unknown samples, and visited the center's Biological Safety Level 3 laboratory and the Process Engineering Facility, where novel biotechnology concepts are developed and refined. Many of these topics are directly relevant to continued efforts to advance biodefense capabilities in both countries.

Sandia's New Lab

Located at the heart of the Sandia/California site, and with portions of the building in both the classified limited area and the unclassified property protection area, the state-of-the-art Distributed Information Systems Laboratory will be easily accessible to all people on site and to visitors.

A dedication ceremony for the new Distributed Information Systems Laboratory (DISL) took place June 10 on the grounds of **Sandia National Laboratories** in Livermore.

DISL will enable the development and deployment of distributed information systems technologies for the Department of Energy/National Nuclear Security Administration's (DOE/NNSA) nuclear weapons complex (NWC).

The $37.9-million project, sponsored by the DOE/NNSA Advanced Simulation and Computing (ASC) program, is a critical element of the ASC strategy to develop and deploy high performance modeling and simulation capabilities into the NWC, said David Crandall, NNSA Assistant Deputy Administrator for Research, Development, and Simulation.

PPPL Opens House

The chance to tour a fusion machine and play with plasma — the fourth state of matter — drew about 2,000 visitors to an open house at the U.S. Department of Energy's **Princeton Plasma Physics Laboratory** (PPPL) on June 12.

PPPL's Kevin Rhoades shows a youngster how to operate a fire extinguisher.

The laboratory's visitors, ranging from tots to seniors, walked around the National Spherical Torus Experiment (NSTX), learned about the physics behind sports games, and participated in tabletop demonstrations about electromagnetism, thermodynamics, and common plasmas, as well as in hands-on safety activities.

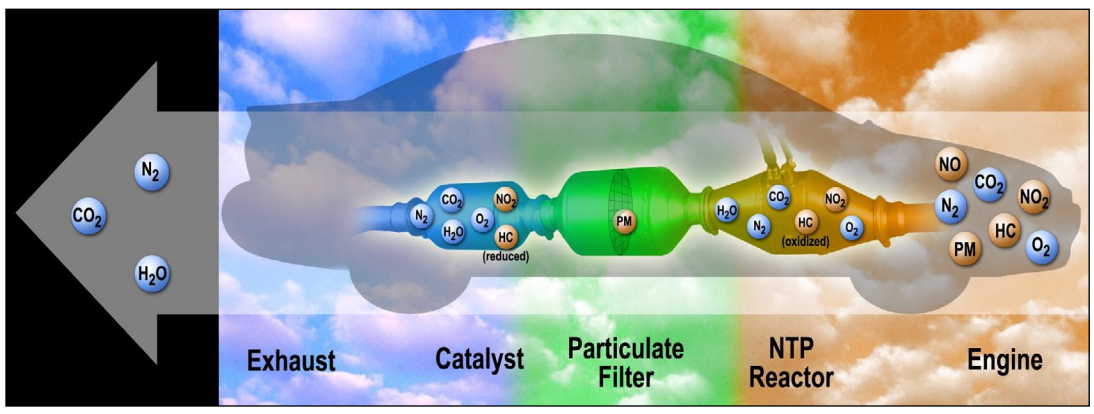
"We had a great time showing our laboratory to our neighbors, entertaining children with our science, and explaining fusion energy," said PPPL Director Rob Goldston.

Added **John DeLooper**, PPPL Associate Director of External Affairs, "An open house lets us show the community what we do at PPPL and spread the message about fusion. Our staff, students, and guests all had a great time together on Saturday."

Lab Work

PNNL Technology Cleans Emissions

Working with industry partners, **Pacific Northwest National Laboratory** (PNNL) developed an exhaust after-treatment system for lean-burn diesel and gasoline engines based on non-thermal plasma (NTP) assisted catalysis.

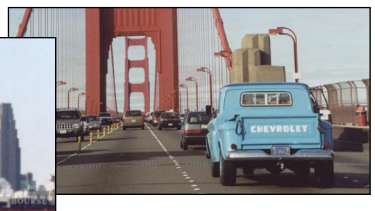


Adding a particulate filter to the PNNL system can reduce PM emissions by 90%. PM emissions cause respiratory irritation and possibly contribute to chronic health problems.

This system converts harmful oxides of nitrogen (NOx) and particulate matter (PM) emitted from vehicle engines into clean air components.

In lab tests with a simulated gas mixture, this technology reduced NOx by nearly 100%. Tests with actual diesel engines have achieved greater than 75% NOx reduction over a range of operating conditions and up to 50% PM reduction.

Smog caused by vehicle emissions poses severe environmental and health risks



By adding an optional particulate filter, this system can reduce PM emissions by up to 90%.

The exhaust after-treatment system performs well in the lean-burn conditions of energy-efficient diesel engines, where conventional three-way catalytic converters are inadequate. It also could easily be incorporated into existing tailpipe designs with little modification as a retrofit option for older vehicles.

The system combines an electrically energized gas, or plasma, with specialized catalyst materials that selectively bring about chemical reactions to reduce NOx.

A technology that effectively reduces NOx and PM emissions from vehicles is needed because these emissions pose environmental and health risks. NOx emissions react with water vapor in the atmosphere to form acid rain and are a precursor to ozone, a major component of smog.

PM emissions cause respiratory irritation and possibly contribute to chronic health problems. Moreover, a September 2002 Environmental Protection Agency report links diesel emissions to cancer in animals.

More info: www.pnl.gov

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Tech Watch: Laboratory Techs Ready for Transfer

Battling Wood Eaters

ARS scientists **Maria Rojas**, **Juan Morales-Ramos**, and **Frederick Green** of the USDA Forest Service have found a new weapon for battling wood-eating foes — a termiticide containing low concentrations of napthalenic compounds. Similar substances are also found in mothballs.

The termiticide will help control both native Eastern subterranean and exotic Formosan subterranean termites, and has proven effective in field tests in Mississippi and Louisiana.

The naphthalenic compounds were incorporated into a cellulose-based matrix, creating a toxic bait that termites like to eat, and is more readily spread throughout their colonies.

Formosan subterranean termites cost Americans about $1 billion per year in control and repair costs, and native termite species add another billion to that total. This product is environmentally friendly because it is effective in very low concentrations and contains no heavy metals.

It is very inexpensive, costing only $1 per gram compared to products currently on the market that deliver similar results and cost up to $50 per gram.

The technology could have great use by companies developing insecticides for urban pests such as termites, roaches and ants.

Refer to patent application USPN 6,691,453 (Docket #0066.01), "Naphthalenic Compounds as Termite Bait Toxicants."

Foreign rights are available for this technology.

More info: Maria G. Rojas, (504) 286-4472, grojas@srrc.ars.usda.gov.

ORNL Treats Water

A new **Oak Ridge National Laboratory** (ORNL) invention advances the degradation and immobilization of contaminants in soil and groundwater.

The oxidative particle mixture and method includes providing a material that has a minimal volume of free water, mixing at least one inorganic oxidative chemical in granular form with a carrier fluid containing a fine-grained inorganic hydrophilic compound, and injecting the resulting mixture into the subsurface.

The granular form of the inorganic oxidative chemical dissolves in the injection areas, and the oxidative ions move by diffusion and/or advection, thereby extending the treatment zone over a wider area than the injection area.

The organic contaminants in the soil and groundwater are degraded by the oxidative ions, which form solid byproducts that can absorb significant amounts of inorganic contaminants, metals, and radionuclides for in situ treatment and immobilization of contaminants.

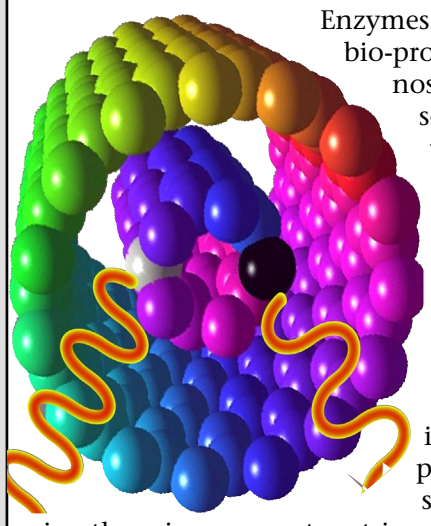
The method and composition of the oxidative particle mixture for the long-term treatment and immobilization of contaminants in soil and groundwater reduces contaminant toxicity in a subsurface area without the continued injection of treatment material, or for movement of the contaminants, or without the need for continuous pumping of groundwater through the treatment zone, or removal of groundwater from the subsurface area of contamination.

The state of development for the technology is proof of principle as shown in the lab, with product development the next step in the research and development process.

ORNL seeks a licensing partner to commercialize this technology.

More info: Russ Miller, Commercialization Manager, ORNL Technology Transfer and Economic Development, (865) 574-8746, or millerrr@ornl.gov

PNNL's Armored Enzymes



Enzymes are useful for bio-processing at a nanoscale. However, a serious drawback to their use is that when exposed in a solution, they have very short lifetimes. Present ways of ameliorating this problem involve immobilizing the protein on a solid support or entrapping them in a support matrix.

To a degree, these methods are successful; however, for many reasons, they do not completely solve the problem and, in fact, may cause the enzyme to become inactivated during the immobilization process.

To address this problem, researchers at DOE's **Pacific Northwest National Laboratory** have developed armored, single-enzyme nanoparticles that dramatically stabilize a protein by surrounding each enzyme with a porous composite organic/inorganic shell less than a few nanometers thick.

While such armored enzymes show some decreased efficiency, they are stable for long periods of time and have the same binding constant as free enzymes.

Experimental data suggest that the armored shell is porous enough not to interfere with the proteolysis of proteins up to a molecular weight of 66K.

These armored single-enzyme nanoparticles remain soluble in aqueous solutions and can be immobilized onto solid supports or matrices for applications that require that form.

More info: Ron Thomas, (509) 372-6043, or ron.thomas@pnl.gov

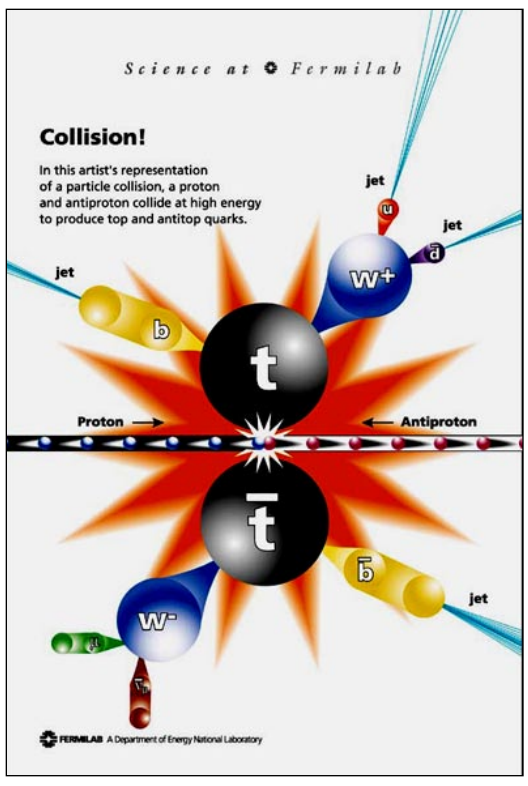
Proven to Work

FermiLab, Berkeley Team to Measure Top Quark

In a case of the plot thickening as the mystery unfolds, the Higgs boson has just gotten heavier, even though the subatomic particle has yet to be found.

In a letter published in the June 10, 2004 issue of the scientific journal *Nature*, an international collaboration of scientists working at the Tevatron accelerator at the **Fermi National Accelerator Laboratory** (Fermilab) reports the most precise measurements yet for the mass of the top quark. This requires an upward revision of the long-postulated, but still undetected, Higgs boson.

"Since the top quark mass we are reporting is a bit higher than previously measured, it means the most likely value of the Higgs mass is also higher," said Ron Madaras, a physicist with the U.S. Department of Energy's **Lawrence Berkeley National Laboratory** (LBNL) who heads local participation in the D-Zero experiment at the Tevatron. "The most likely Higgs mass has now been increased from 96 to 117 GeV/c^2 (GeV/c^2 is a common particle physics unit of mass, a proton measures 1 GeV/c^2), which means it's probably beyond the sensitivity of current experiments but very likely to be found in future experiments at the Large Hadron Collider being built at CERN (European Organization for Nuclear Research)."



The Higgs boson has been called the missing link in the Standard Model of Particles and Fields, the theory that's been used to explain fundamental physics since the 1970s. Before 1995, the top quark was also missing, but then experimental teams working at the Tevatron's two large detector systems, D-Zero and CDF, independently discovered it. Scientists believe that the Higgs boson — named for Scottish physicist Peter Higgs, who first theorized its existence in 1964 — is responsible for particle mass, the amount of matter in a particle.

According to the theory, a particle acquires mass through its interaction with the Higgs field, which is believed to pervade all of space and has been compared to a molasses that sticks to any particle rolling through it.

The Higgs field would be carried by Higgs bosons, just as the electromagnetic field is carried by photons.

"In the Standard Model, the Higgs boson mass is correlated with top quark mass," said Madaras, "so an improved measurement of the top quark mass gives more information about the possible value of the Higgs boson mass."

According to the Standard Model, at the beginning of the universe there were six different types of quarks. Top quarks exist only for an instant before decaying into a bottom quark and a W boson, which means those created at the birth of the universe are long gone.

However, at Fermilab's Tevatron, the most powerful collider in the world, the collision between billions of protons and antiprotons will yield the occasional top quark.

Despite their brief appearance, these top quarks can be detected and characterized by the D-Zero and CDF experiments.

In announcing the D-Zero results, experiment cospokesperson John Womersley said, "An analysis technique that allows us to extract more information from each top quark event that occurred in our detector has yielded a greatly improved precision, of ±5.3 GeV/c^2 , in the top mass measurement, compared with previous measurements."

The D-Zero detector system consists of a central tracking detector array, a hermetic calorimeter for measuring energy, and a large solid angle muon detector system. LBNL designed and built the two electromagnetic end-cap calorimeters and also the initial vertex detector.

While raising the central value for top quark mass appears to diminish the possibility that the Higgs boson could be discovered at the Tevatron, it does open a wider door for new discoveries in supersymmetry, or SUSY, an extension of the Standard Model that unites particles of force and matter through the existence of superpartners, sometimes referred to as sparticles.

"The current mass limits or bounds that exclude supersymmetric particles are very sensitive to the top quark mass," said Madaras.

"Since the top quark mass is now higher, these limits or bounds are not as severe, which increases the chance of seeing supersymmetric particles at the Tevatron."

FS EnVision, from page 1

trust, and better decisions." McGaughey developed a complete package of technology transfer products for EnVision.

A variety of tools in the public-domain software package makes it easy to use. He also provides online tutorials, online reference materials, training workbooks, brochures, and posters. He has given many training sessions at local, regional, and national levels.

Working with the Rural Technology Initiative (RTI) at the University of Washington, McGaughey helped RTI incorporate EnVision into a fire-risk mapping tool that is part of a larger landscape management system. Fire-risk maps can be used to evaluate present risk levels, as well as to compare the effectiveness of simulated fire-risk reduction treatments across real forested landscapes.

More info: Contact Bob McGaughey, USDA Forest Service, at <bmcgaughey@fs.fed.us> or visit <www.fs.fed.us/envision>

Tech Admin. Changes, from page 1

last week. Taking his position as Deputy Undersecretary for Technology is Michelle O'Neill. She was previously the Deputy Assistant Secretary for Information Technology Industries at the International Trade Administration in Commerce. Becoming Deputy Assistant Secretary for Technology Policy is Daniel W. Caprio, Jr., who is currently chief of staff, special assistant, and technology policy adviser to Federal Trade Commissioner Orson Swindle.

On the legislative front, Congress continues to work on the appropriations and authorization bills for FY 2005. The Reagan funeral set them back in what is already a short year because of elections. There is already talk of one or several omnibus appropriation bills. From a funding standpoint, expect continued growth in the DOD and Homeland Security budgets due to Iraq and terrorist threats.

As a result, there is a lot of pressure to keep the budget levels for domestic programs fairly flat.

EPA Collaboration, from page 1

Paul Gilman.

The one-of-a-kind water test loop facility, co-designed by the EPA and ECBC, simulates an actual metropolitan water supply chain. Studies will use chemical warfare agents and toxins to validate sensor systems that detect these and other highly toxic chemicals entering water systems.

In addition, the fate of chemical warfare agents in various source waters, and the fate and transport of chemical and biological threat agents in water systems will be studied. With this facility, scientists will be able to understand the impact of a chemical or biological attack on our nation's water system. The studies will help figure out how best to protect against or mitigate the effects of such a terrorist event.

The VHP system is a breakthrough decontamination solution that will allow first responders to clean a building, aircraft, vehicle, and sensitive equipment subject to a chemical or biological attack. The VHP technology is compatible with many materials, equipment and environments, and may reduce the risk of human exposure to contaminated areas and objects.

The demonstration is part of an ongoing collaborative research and development project initiated in July 2002 to evaluate, optimize and modify STERIS's subsidiary, Strategic Technology Enterprises, Inc.'s, decontamination technologies for use against chemical and biological warfare agents. A modified VHP system was successfully used to remediate two facilities in excess of 1.4 million cubic feet each that were contaminated in the 2001 anthrax attacks.

Dr. Paul Gilman, EPA Assistant Administrator for Research and Development stated, "These technologies help assure that the water we drink and the buildings in which we work, study and conduct the nation's business are protected.

The U.S. Army, EPA and STERIS Corporation are protecting the health and well-being of all Americans."

The EPA, ECBC and STERIS have established formal partnership agreements. The Memorandum of Understanding between ECBC and the EPA, signed in October 2002, provides the framework for this research and development program. ECBC Director Jim Zarzycki stated, "In establishing these partnerships the EPA, ECBC, Corps of Engineers and Strategic Technology Enterprises are combining resources and working efficiently, which ultimately saves taxpayer money."

Arthitis Cherries, from page 1

markers, in blood samples from healthy volunteers who were fed precise amounts of fresh Bing cherries. Reported in a 2003 issue of the *Journal of Nutrition*, the California investigation paved the way for a recent followup study at the Davis center.

Life—A Bowl of Cherries?

Imagine being asked to eat a bowlful of 45 fresh, pitted Bing cherries for breakfast. Ten healthy women, aged 22 to 40, agreed to do that for the California scientists' preliminary study. Volunteers were instructed not to eat strawberries or other fruits and vegetables, or to drink tea or red wine for 2 days before the cherry breakfast. These foods are high in antioxidants, thought to fight inflammation. "They could have interfered with our ability to determine the specific effects of the Bing cherry antioxidants," explained Jacob.

Danise Gonzalez, a registered nurse with ARS's Western Human Nutrition Research Center, completes a blood draw on a participant in a study of the potential benefit of cherries for inflammation and arthritis.

"Our main focus in this study was gout, a very painful form of arthritis," said co-investigator Darshan S. Kelley, a chemist at the nutrition center. "During gout attacks, crystals of a naturally occurring chemical, uric acid, accumulate in joints—commonly in the toes—and cause pain. Urate in blood plasma is a precursor of these uric acid crystals. So, we closely measured volunteers' levels of plasma urate.

"We also indirectly measured the amount of urate that was moved out of the body in urine. We took blood plasma and urine samples before the volunteers ate the cherry breakfast and at intervals of 1-1/2, 3, and 5 hours afterward." Volunteers' plasma urate levels decreased significantly over the 5 hours after their meal of cherries. Levels of urate removed from the body in urine increased over those 5 hours.

These urate results strongly suggest that cherries can play an important role in fighting gout. So do the results from the scientists' assays of some other indicators of inflammation. Significant changes in the levels of markers are an indication of a healthy immune system at work, attacking inflammation. Markers monitored included C-reactive protein, nitric oxide, and tumor necrosis factor alpha.

C-reactive protein, produced by the liver, increases rapidly during inflammation, such as during a gout attack. In a healthy body, blood (serum) levels of C-reactive protein are extremely low.

Another reliable sign of inflammation: the unwanted increase in nitric oxide. This biochemical is thought to play a role in damaging arthritic joints. The third marker, tumor necrosis factor alpha, is secreted in greater quantities when the body is fighting tumors that may induce inflammation. As is true for C-reactive protein, a healthy body that isn't fighting an inflammation has very little of this marker.

At the 3-hour monitoring interval, C-reactive protein and nitric oxide were somewhat lower than at the start of the study. "Even though these levels were not significantly lower, the trend was in the right direction and so is of interest," noted Kelley. Unexpectedly, the scientists found no change in levels of tumor necrosis factor alpha. That's in contrast to a previous study, conducted elsewhere, in which natural compounds in fruits and vegetables were found to decrease levels of this marker. But the trends toward decreases in the other two markers do agree with results of other scientists' earlier in-vitro studies of cherry extracts.

Jacob and Kelley collaborated with chemists Giovanna M. Spinozzi and Vicky A. Simon of the nutrition center; chemist Ronald L. Prior, who is with ARS at Little Rock, Ark.; and research associate Betty Hess-Pierce and Professor Adel A. Kader, of the University of California, Davis.

A Month of Fresh Cherries

The followup study, conducted in 2003, involved more people, more cherries, and a greater array of inflammatory-response markers. Eighteen women and two men—aged 22 to 40—participated in the 64-day investigation. Many of the new volunteers began the study with elevated C-reactive protein levels. "That made it easier to detect any decline in C-reactive protein levels as the study progressed," said Kelley. "We're particularly interested in this protein because a recent major study indicated that it's more reliable than cholesterol as a predictor of cardiovascular disease.

"This group ate the same daily amount of fresh Bing cherries as our earlier volunteers. But we asked them to eat the cherries throughout the day instead of just at breakfast." The researchers are now analyzing blood samples. The grower-sponsored California Cherry Advisory Board helped fund the research. Final results should be available later this year. Then we'll know more about the health benefits of this sweet treat.

USDA Technologies

by Neil MacDonald
Federal Technology Watch

The Department of Agriculture's Food Safety and Inspection Service (FSIS) plans to post information on its website about the use of new technologies in the production of meat, poultry and egg products that are or have been considered by the agency.

FSIS is eager to receive public comment on these plans—part of its strategy to increase public and industry awareness of new technologies and foster their use by small and very small food production plants.

Although FSIS has had a longstanding interest in the use of technology in meat and poultry establishments and egg product facilities, it believes the development and proper use of technology can contribute toward improving safety in the food supply.

FSIS issued a document earlier this year providing guidance to help such establishments determine if they need to notify FSIS about new technologies that they intend to employ in meat and poultry and egg product plants.

A New Technology Staff (NTS) formed within FSIS last summer has a mandate to review new technologies that companies plan to use in processing various foods and ensure that their use is consistent with agency regulations.

New technology is defined by FSIS as "new applications of equiment, substances, methods, processes or procedures affecting the slaughter of livestock and poultry, or processing of meat, poultry or egg products." Examples of new technologies in food safety include steam vacuums, steam pasteurization, and antimicrobials. FSIS also recognizes that some new technology notifications might contain proprietary information.

More info: www.fsis.usda.gov

Join an FLC Committee

The FLC encourages all technology and commercialization specialists to become involved in one or more FLC committee. These committees research, report, discuss, and act on many of the issues facing the ever-changing role of federal technology transfer. Below is a list and description of the eight committees plus their respective points of contact.

Awards Committee

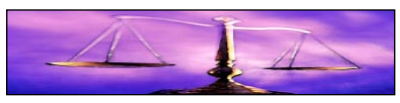
Administers and implements activities related to the FLC Awards for Excellence in Technology Transfer. *Point of Contact*: Victor Chavez, Sandia National Laboratories, 505-844-4220, vachave@sandia.gov

Education & Training Committee

Implements and oversees activities that ensure the awareness and availability of the FLC's technology and technical assistance resources to the benefit of educational institutions at all levels. The committee also plans, designs, and implements all FLC training programs. *Point of Contact*: Lynn Murray, Volpe National Transportation Systems Center, 617-494-2224, murrayl@volpe.dot.gov

Financial Management Committee

Advises and assists the FLC Executive Board and Committee in collecting, managing, and disbursing FLC funds. *Point of Contact*: Beth Thomas, National Institute of Standards and Technology, 301-975-4521, beth.thomas@nist.gov



Legal Issues Committee

Provides a forum for the discussion of legal concerns in the conduct of effective technology transfer programs by FLC members. *Point ofContact*: Robert Charles, Medical Research and Material Command, 301-619-7663, robert.charles@det.amedd.army.mil

Communications Committee

Integrates, coordinates, and initiates activities that market the services of the FLC and its members. *Point of Contact*: Al Jordan, Marshall Space Flight Center, 256-544-6532, al.jordan@msfc.nasa.gov

Planning & Policy Committee

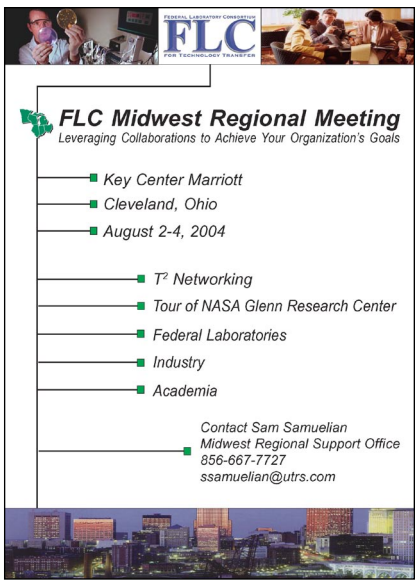
Recommends strategic plans, long-range goals, and policy statements and positions for Executive Board consideration and to ensure the FLC's conformance with its charter. *Point of Contact*: Larry M. Dickens, UT-Battelle, LLC, 865-576-9682, dickenslm@ornl.gov

Program Committee

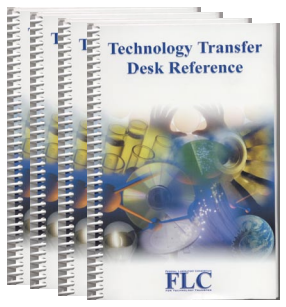
Plans and promotes FLC conferences and seminars, including the annual national meeting. *Point of Contact*: Sharon Borland, U.S. Army ERDC, 703-428-9112, sharon.l.borland@erdc.usace.army.mil

State & Local Government Committee

Implements and oversees activities that ensure the awareness and availability of FLC technology and technical assistance resources to the benefit of state and local governments. *Point of Contact*: jennelle Derrickson, William J. Hughes Technical Center, 609-485-5096, jennelle.derrickson@faa.dot.gov



FLC T² Desk Reference



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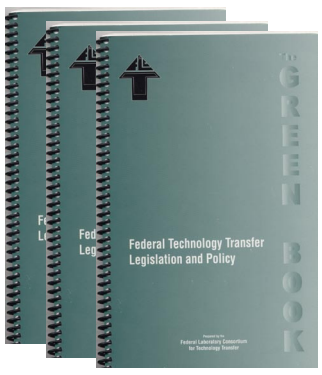

Federal Technology Transfer Legislation and Policy provides the principal statutory and presidential executive order policies that constitute the framework of federal T².

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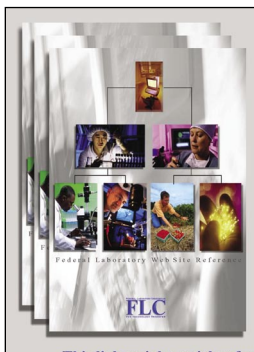

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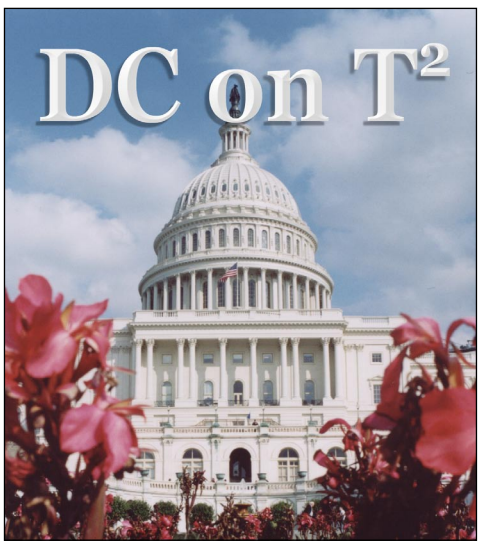
DC Dispatch, from page 1

marks. While some recent U.S. economic indicators show "robust growth," he acknowledged that challenges remain.

"There are many regions of our country that face structural economic change, and we believe it's vitally important that every region understand the prosperity-generating power of innovation," said Sampson, forecasting that "innovation will be the engine of all economic growth and job creation in the 21st century."



About 1,000 people—including federal agency staff, state and local government officials, mayors, university presidents, lawmakers, policy analysts, and academic researchers—participated in the June 8-10 event in Washington, DC.

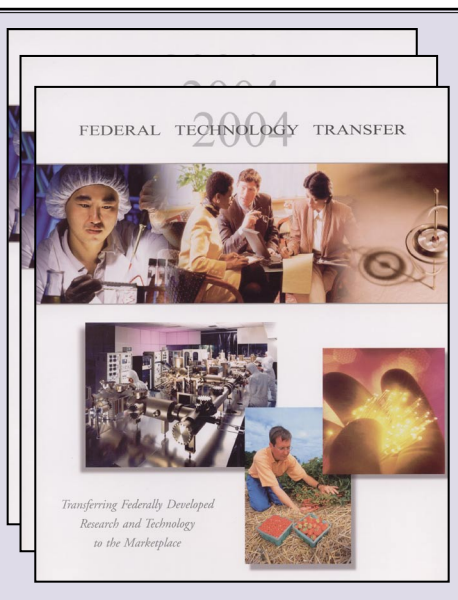
Wince-Smith said the large attendance was a reflection of the "commitment to create a dynamic, interconnected environment for sustainable economic growth, global competitiveness and prosperity," and she credited former president Ronald Reagan with "fundamentally chang[ing] the way we think about economic development."

"We know the global competitive marketplace is fierce, the pace of change is relentless and throughout the world we witness the emergence of highly-skilled, talented workers and knowledge creators [who] also want to participate in the innovation opportunities of the future," she said.

"Companies, universities and governments at all levels must adapt to a new competitive landscape," Wince-Smith said, "where flexibility, creativity and collaboration are the keys to success."

"The future depends on innovation," Commerce Secretary Donald Evans told conference delegates, as he praised the efforts of EDA and the Council on Competitiveness. "The innovative capacity of the United States has always been one of our greatest strengths," he said.

"The [U.S.] innovation infrastructure is built on over 200 years of invention, discovery, development and commercialization. It's an intricate system that exists no place else on Earth." Evans also paid tribute to the entrepreneurial spirit, and the businesses established by America's entrepreneurs in garages across the nation. Another speaker, Under Secretary of Commerce for Technology Phil Bond, urged delegates to ensure that "America remains the Innovation Headquarters for the world."



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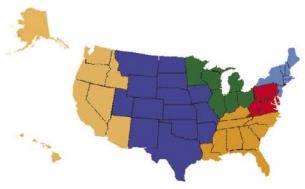

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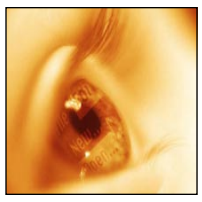

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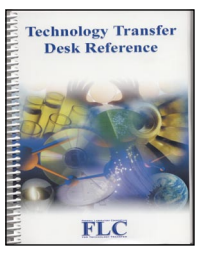

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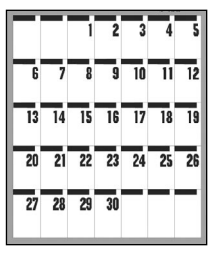

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See the Upcoming Events page to learn where and when T² events are taking place.

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