

# NewsLetter

Week of November 20, 2006

Vol. 7, No. 24

## Bringing in the 'Bee Team'

by Todd Hanson

Initially, the concept seems too incredible to be possible — train a common honeybee to physically respond to the distinctive smell of specific explosives, then develop a method for measuring or observing that response in order to use the bee's reaction to the smell of explosives as a natural explosives detector. As incredible as it may seem, Laboratory scientists recently created such a detector under the Stealthy Insect Sensor Project.

According to Tim Haarmann of Molecular Microbiology and Immunology (B-1), principal investigator for the Los Alamos Stealthy Insect Sensor Project, the project applies old knowledge to a pressing new problem. "Scientists have long marveled at the honeybee's phenomenal sense of smell, which rivals that of dogs," said Haarmann. "But previous attempts to harness and understand this ability were scientifically unproven. With more knowledge, our team thought we could make use of this ability."

By studying and training bees, Haarmann and members of the Los Alamos Stealthy Insect Sensor Project team has been able to harness the honeybee's exceptional olfactory sense by using the bees' natural reaction to nectar, a proboscis extension reflex (sticking out their tongue) to record an unmistakable response to a scent. Using Pavlovian techniques, researchers were able to train the bees to give a positive detection response via the PER when exposed to vapors from TNT, C4, and TATP explosives.

The Stealthy Insect Sensor Project was born out of a global threat from the growing use of improvised explosive devices or IEDs, especially those that present a critical vulnerability for American military troops in Iraq and Afghanistan, and as an emerging danger for civilians worldwide. Current strategies to detect explosives are expensive and, in the case of trained detection dogs, too obtrusive to be used very discreetly. The benefits of using bees are obvious, given that they are small and discreet, offer the element of surprise, and are inexpensive to maintain and even easier to train than dogs. As a result of this need, initial funding for the work was provided by a development grant from the Defense Advanced Research Projects Agency.

The team that Haarmann put together began with research into why bees are such good detectors, going beyond merely demonstrating that bees can be used to identify the presence of explosives. By looking at such

*continued on Page 2*



*Scientists train honeybees to detect explosives*



*In the lab, Kirsten McCabe of Molecular Microbiology and Immunology trains a bee to respond to puffs of explosive vapors using a sugar water reward.*

*Below right: Fresh from one of the Laboratory's hives, these bees are harnessed and ready to be trained.* Los Alamos

*National Laboratory photos*



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# For Your Safety



## Uninvited guests can spoil the holidays

With all the time, effort and planning that goes into holiday cooking, it's tempting to take a few shortcuts when it comes to preparing the meal. But don't.

Food preparation practices popular during this time of year can increase the risk for unwelcome bacteria and food-related illness. Hectic schedules may contribute to cutting corners in the kitchen, and home cooks may be less familiar with cooking the large pieces of meat often served at this time of year.

Keep dining experiences safe and enjoyable this holiday season by following these tips:

- Practice the clean-separate-cook-chill guidelines.

**Clean:** Wash hands and food-contact surfaces often.

**Separate:** Don't cross-contaminate; this is especially important for raw meat and seafood.

**Cook:** Cook to proper temperatures. Use a food thermometer.

**Chill:** Refrigerate promptly.

- Keep hot foods hot and cold foods cold.

The "danger zone" for the growth of harmful bacteria is 40-140 degrees Fahrenheit.

- Perishable foods should not be left at room temperature for more than two hours.

- Enjoy commercial eggnog, but stay clear of home-prepared eggnog made with raw eggs. Salmonella, present in raw and undercooked eggs, also is a risk in raw, homemade cookie dough containing eggs.

- Follow food-safety guidelines for the preparation, handling and storage of homemade food gifts.

For more information, go to [www.foodsafety.gov/](http://www.foodsafety.gov/) online.

## Director updates legislative oversight committee

Laboratory Director Mike Anastasio updated the state Laboratory Legislative Oversight Committee on security, the budget, and other issues during a meeting November 9 at the State Capitol Building in Santa Fe. The committee, co-chaired by State Rep. Bobby Gonzales, D-Taos, and Sen. Phil Griego, D-Bernalillo, Santa Fe, Sandoval, San Miguel, Los Alamos, Torrance, also heard updates from the director on the Laboratory's efforts to preserve and protect the environment and its small-business subcontracting and community-commitment efforts.



State Rep. Jeannette Wallace, R-Los Alamos, Sandoval, talks with Laboratory Director Mike Anastasio and State Rep. Bobby Gonzales, D-Taos, right, before the Laboratory Legislative Oversight Committee meeting November 9 in Santa Fe. Anastasio addressed the committee on a number of matters. The committee meets several times a year in Santa Fe, Los Alamos, and other locations to hear reports on Laboratory operations. Photos by LeRoy N. Sanchez, Records Management and Media Services and Operations

## Los Alamos National Laboratory NewsLetter

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Los Alamos National Laboratory is a multidisciplinary research institution engaged in strategic science on behalf of national security. The Laboratory is operated by a team composed of Bechtel National, the University of California, BWX Technologies and Washington Group International for the Department of Energy's National Nuclear Security Administration.

Los Alamos enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health and global security concerns.



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## 'Bee Team' ...

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attributes as protein expression, the team sought to isolate genetic and morphological differences between those bees with good olfaction and those without. They also determined how well bees could detect explosives in the presence of potentially interfering agents, such as lotions, motor oil, or insect repellent. In addition, the team studied structural units in the honeybee's antenna and looked for biochemical and molecular mechanisms that could advance their ability to be trained and retain their training for longer periods of time.

The Stealthy Insect Sensor Project a team includes Haarmann, along with Kirsten McCabe of Molecular Microbiology and Immunology (B-1), and Robert Wingo of Chemical Science and Engineering (C-CSE). Additional members include Caroline Weldon and Priya Dighe of B-1; Sara Maurer of Hydrology, Geochemistry, and Geology (EES-6); and Rhonda Robinson and Sherri Sherwood of Environmental Protection's Ecology (ENV-EAQ).



## Lab launches new Security in Action Web site

A new Web site to help employees more readily find essential security information and guidance was launched at the Laboratory. The Security in Action Web site is the idea of the Security Action Team that Director Mike Anastasio recently formed to help clarify security practices and procedures and to better communicate with employees on security issues.

The new Web site, which will serve as a portal to essential security information at the Laboratory, includes security-related messages, action items the Security Action Team and sub-teams are tackling, news briefs, frequently asked questions, and links to security resources and other information.

To view the new Security in Action Web site, go to <http://int.lanl.gov/security/action/> online.

## Protective force personnel increasing random inspections

Protection Technology Los Alamos officers are increasing the frequency of inspections of Laboratory employees exiting Lab facilities and property.

Protective force officers always have conducted random inspections, said Mike Grimler of Physical Security (S-5). What is changed is the increased number and locations of inspections.

"Protective force officers will concentrate on hand-carried items and may ask questions regarding the possession of classified information, material, documents, and media," said Grimler, adding that Lab employees are required to fully cooperate with all direction or instruction from protective force officers.

For more information, contact Grimler at 5-7907 or [mgrimler@lanl.gov](mailto:mgrimler@lanl.gov) or Sidney Branch of S-5 at 5-2245 or [sbranch@lanl.gov](mailto:sbranch@lanl.gov) by electronic mail. Or write to [pfintegration@lanl.gov](mailto:pfintegration@lanl.gov) by electronic mail. Employees should not directly contact Protection Technology Los Alamos.

# New computer model to track contaminants

## Los Alamos receives \$4 million SciDAC grant

by Todd Hanson

Los Alamos scientists are developing a powerful new computer model to study subsurface processes in Earth. The Department of Energy awarded a \$4 million grant to fund the new research tool.

The model, called PFLOTTRAN, will enable geoscience researchers to obtain more accurate predictive capabilities for the movement of underground contaminants.

DOE announced the award as part of \$60 million in grants for thirty Scientific Discovery through Advanced Computing (SciDAC) projects over the next three to five years. The Los Alamos-led Multiscale-Multiphase-Multicomponent Subsurface Reactive Flows modeling effort will receive \$800,000 a year for five years. Los Alamos members of the team include Peter Lichtner of Hydrology and Geochemistry (EES-6) and J. David Moulton and Bobby Philip of Mathematical Modeling and Analysis (T-7).

According to Lichtner, the project's principal investigator, "Predictive modeling of reactive subsurface flows is a daunting task, chiefly because of the range of spatial scales that are involved (from the tiniest pores in the rock to field scales) and the range of time scales involved (from seconds to millions of years). Currently, large-scale three-dimensional models usually can only resolve features down to the order of meters, which makes capturing phenomena at smaller scales, such as millimeters or less, pretty difficult. The modeling process we propose is designed to change that by providing multiscale modeling capabilities at various spatial scales."

The enhanced modeling capabilities that will result from this work could have many applications, including improving scientist's understanding of radionuclide migration at DOE's Hanford facility, where submillimeter-scale transfer effects have thwarted some cleanup efforts. It might also be used for modeling the sequestration of carbon dioxide in deep geologic formations, where a better understanding of underground gas flow patterns is necessary to describe the carbon dioxide dissipation rate.

Other organizations collaborating with Los Alamos on the project include Argonne, Oak Ridge, and Pacific Northwest national laboratories, and the University of Illinois at Urbana-Champaign.

DOE's SciDAC program was launched in 2001 to develop new tools and techniques for advancing scientific research through computer simulation in all mission areas of DOE's Office of Science. More information about the program is available at [www.scidac.gov](http://www.scidac.gov) online.



## Matching generosity

Deputy Laboratory Director John Mitchell, right, presents two symbolic checks for \$700,000 each to United Way at a quarterly breakfast meeting in Pojoaque with community leaders from throughout Northern New Mexico. The total \$1.4 million contribution consisted of \$700,000 pledged by Lab employees and a matching \$700,000 from Los Alamos National Security, LLC. Pictured with Mitchell are Lillian Montoya-Rael, leader of the Lab's Community Programs Office, far right; Katherine Freeman, president of United Way of Santa Fe County, left; and Donna Schroeder, executive director of United Way of Northern New Mexico, far left. "With all the uncertainty of the past several months, I am extremely proud of the employees of the Lab. Their contributions were in excess of last year. And it was our pleasure for LANS to match their generosity," said Mitchell, who also summarized the first few months of Lab operations under the new contract with the National Nuclear Security Administration. "I'm extremely honored and pleased that [Lab employees] have placed so much trust in people they didn't know. They are committed, talented professionals." Photo by LeRoy N. Sanchez, Records Management and Media Services and Operations

# New Postdoc Association formed at Laboratory

by Hildi Kelsey

The Laboratory has a long and remarkable legacy. One thing it hasn't had — until now — is a formal association for postdoctoral appointees.

The recently-formed Los Alamos Postdoc Association — a first of its kind at the Laboratory — will host Laboratory Director Michael Anastasio as a special guest during its monthly meeting December 13. Anastasio formerly recognized the LAPA as a Laboratory association in August.

The Postdoc Program Office has historically provided many services to postdocs. The new association will complement the services and activities that the postdoc office provides.

The main focus of LAPA is to enhance both the personal and professional lives of the postdoctoral community at Los Alamos. According to LAPA, "The mission of this association at Los Alamos National Laboratory shall be to foster a sense of community among the postdoctoral research staff; to advocate for and be the representative voice of the postdoctoral community; and to provide career development information to the members of the Los Alamos Postdoc Association."

The Los Alamos Postdoc Association sees itself as a resource for postdocs at Los Alamos since it allows them to take a proactive approach to concerns or issues that may be specific to the life of a postdoc.

"LANL is such a big place, and so spread out, that it makes it very difficult to meet fellow postdocs. Given all the changes that have occurred recently at the Lab, LAPA offers cohesion and a sense of camaraderie to the postdocs," said LAPA President Jason Stairs of Physical Chemistry and Applied Spectroscopy (C-PCS).

The association is working on several

topics of interest to the postdoc community. LAPA has successfully put together a series of "conversion seminars" in which former postdocs describe their experience of conversion from postdoc to staff member at the Laboratory, as well as talks on future financial planning and intellectual property. The association has discussed hosting a poster session for postdocs to showcase their research, and is looking into developing a résumé book of all Laboratory postdocs that potential employers could access via the LAPA Web site.

In addition, the LAPA Social Committee hosts a monthly social gathering both in Los Alamos and Santa Fe where postdocs can come together in a relaxed, social setting. In September, the Social Committee hosted its first annual Postdoc Picnic for postdocs and families at Urban Park. More than 160 burgers and dogs were served while postdocs enjoyed games of basketball and volleyball.

As explained by the posted guidelines on the LAPA Web site (available via the postdoc Web page), Lab postdocs are automatically a general member of the association. General Assembly meetings, where the business of LAPA is democratically conducted via votes cast by the voting members of the association, are held from noon to 1 p.m. on the second Wednesday of the month. After attending one meeting, a general member postdoc becomes a voting member of the association.

The Los Alamos Postdoc Association is planning a number of socials, including an ongoing "Postdoc Night," from 5:30 to 8:30 p.m. every third Wednesday of the month at Trinity Beverage Company. All postdocs are encouraged to attend. Reminders and announcements are sent via e-mail. To view the calendar of events and learn more about the association, go to <http://www.lanl.gov/projects/pda> online.

## PATENT AWARDS



*Editor's note: Some of the individuals listed below are no longer employed at the Laboratory but were at the time they applied for the patent.*

### Recently issued patent awards

#### Processing materials inside an atmospheric-pressure radiofrequency nonthermal plasma discharge

Patent No. 7,025,856, issued April 11  
**Ivars Henins** of Biology (BIO), **Jaeyoung Park** and **Hans Herrmann** of Plasma Physics (PHY-PP), and **Gary Selwyn** formerly of the Laboratory

#### Through-the-Earth Radio

Patent No. 7,043,204, issued May 9  
**David Reagor** and **Jose Vasquez-Dominguez** of the Superconductivity Technology Center (MPA-STC)

#### Radial-Radial Single Rotor Turbine

Patent No. 7,044,718, issued May 16  
**David Platts** of Hydrodynamics and X-ray Physics (P-22)

#### Method and Apparatus for Elemental and Isotope Measurements and Diagnostics — Microwave Induced Plasma-Cavity Ringdown Spectroscopy

Patent No. 7,054,008, issued May 30  
**Yixiang Duan** of Chemical Sciences and Engineering (C-CSE)

#### Diamond-Silicon Carbide Composite

Patent No. 7,060,641, issued June 13  
**Jiang Quian** and **Yusheng Zhao** of the Lujan Center (LANSCE-LC)

#### Nonthermal Plasma Processor Utilizing Additive-Gas Injection and/or Gas Extraction

Patent No. 7,063,819, issued June 20  
**Louis Rosocha** of Plasma Physics (P-24)

#### Electrochromic Salts, Solutions and Devices

Patent No. 7,064,212, issued June 20  
**Anthony Burrell**, **Benjamin Warner** and **Thomas McCleskey** of Materials Chemistry (MPA-MC)

#### Preparation of DNA-Containing Extract for PCR Amplification

Patent No. 7,074,565, issued July 11  
**John Dunbar** and **Cheryl Kuske** of Molecular Microbiology and Immunology (B-1)

#### Chemical Synthesis of Chiral Conducting Polymers

Patent No. 7,074,887, issued July 11  
**Hsing-Lin Wang** of Physical Chemistry and Applied Spectroscopy (C-PCS) and **Wenguang Li**

#### Preparation of High-Strength Nanometer Scale Twinned Coating and Foil

Patent No. 7,078,108, issued July 18  
**Xinghang Zhang** of Structure/Property Relations (MST-8), and **Amit Misra** and **Michael Nastasi** of the Center for Integrated Nanotechnologies (MPA-CINT)

#### Neutron and Gamma Detector Using an Ionization Chamber with an Integrated Body and Moderator

Patent No. 7,078,705, issued July 18  
**Kiril Ianakiev** and **Martyn Swinhoe** of Safeguards Science and Technology (N-1) and **John Lestone** of Transport Applications (X-1-TA)



## Open enrollment continues through November 30

Los Alamos National Security, LLC, active employees can make changes to their health care coverage for 2007 during Open Enrollment. For more information, go to <http://www.lanl.gov/worklife/benefits/open/index.shtml> online.



## Annual Holiday Drive

The Laboratory's 2006 Holiday Drive to collect new toys and nonperishable food items for Northern New Mexico continues through December 8.

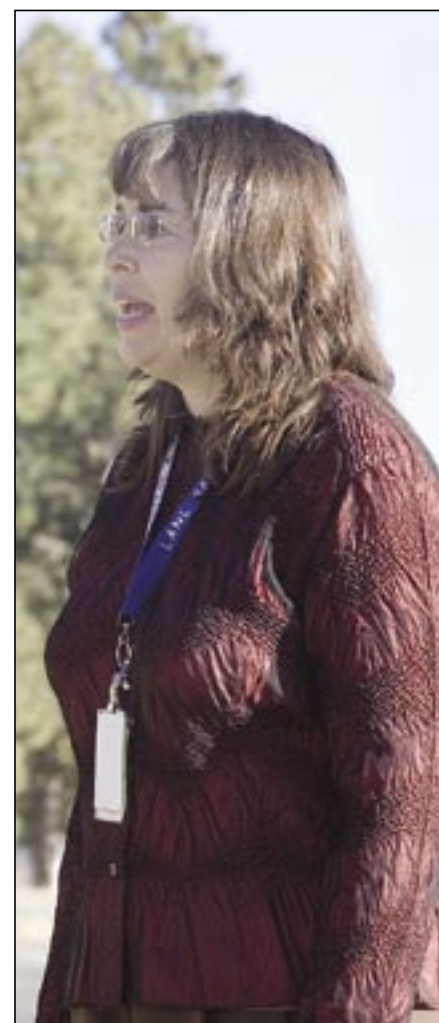
For more information, contact Tim Martinez of the Community Programs Office (CPO) at 7-2390.

# Veterans honored at Laboratory



Above, members of the Protection Technology Los Alamos honor guard stand at attention during the flag raising ceremony, left, outside the Otowi Building as the Laboratory honored this country's veterans. The Veterans' Interest Group and the Office of Equal Opportunity and Diversity sponsored the events, which also included a breakfast, talk, and a presentation on veterans' benefits.

Right, Mary Beth Stevens of the Ombuds Program Office sings the National Anthem at the ceremony. Photos by Richard Robinson, Records Management and Media Services and Operations



Runners prepare for the start of the annual fun run and walk that is part of Los Alamos' annual tribute to veterans. More than 300 Laboratory employees participated in the event. Photo by Mike O'Keefe, Records Management and Media Services and Operations



## Web site created for Security Perimeter Project operations

Information about the Laboratory's Security Perimeter is available on a new Web page.

The site includes access requirements, vehicle inspections procedures, maps, a frequently asked questions section, and news articles. A video is currently in production and will be made accessible on the Web site in the near future.

Employees can access the Security Perimeter Web page at <http://int.lanl.gov/security/perimeter/index.shtml> online.

Lab employees who have additional security-related questions about the Security Perimeter can write to [spp-questions@lanl.gov](mailto:spp-questions@lanl.gov) by e-mail.

## Employees reminded about improper disposal of items in wastewater

by Steve Sandoval

Recently some items were improperly disposed of in the Lab's sanitary wastewater stream.

Laboratory personnel should not dispose of items such as paints, oils, or solid items, solvents, sharp objects, rags, paper towel items, volumes of clean water in excess of 1,000 gallons per day, etc. in drains. These are items that wouldn't normally be disposed of in sinks and drains at home, so they shouldn't be disposed of in Laboratory drains, said Crystal Rodarte Romero of Utilities and Infrastructure (MSS-UI). For more information, see the prohibited disposal items at [http://em.lanl.gov/Downloads/SWWS\\_FACT\\_SHEET.pdf](http://em.lanl.gov/Downloads/SWWS_FACT_SHEET.pdf) online (Adobe Acrobat Reader required).

Certain chemicals can destroy the beneficial bacteria that break down sewage, and the Laboratory must comply with all applicable state and federal requirements for wastewater, said Rodarte Romero.

"We have developed specific waste acceptance criteria for the treatment plant to meet the National Pollutant Discharge Elimination System permit under the Clean Water Act," said Rodarte Romero. "There is a process to determine the acceptability of waste and a process to dispose of that waste should it be unacceptable for the sanitary wastewater treatment plant. This process requires a Waste Profile Form, which must be submitted to the review committee." For more information, see the Lab's waste acceptance criteria at <http://swo.lanl.gov/Waste%20Acceptance%20Criteria/PLAN-WASTEMGMT-002,R.4.2.pdf> online (Adobe Acrobat Reader required).

Rodarte Romero said employees also can call 5-7855 for guidance, or contact their waste management coordinator who should be familiar with the form and can refer employees to LIR 404-00-02 for specific details. For a listing of waste-management coordinators, contact Andrew Montoya of Waste Acceptance (WS-WA) at 5-1654 or [andym@lanl.gov](mailto:andym@lanl.gov) by e-mail.



# So... what do you think?

**Q:** Have you accessed the Laboratory's new Security in Action Web site? What other things do you think the Lab can do to heighten employee awareness of security issues?



**Enrique Batisita of Theoretical Chemistry and Molecular Physics (T-12)**

I haven't. I think they should stress in group meetings the impact that small incidents can have once they play out in the media — that something small can get so big.



**Angelica Gurule of Risk Reduction (ENV-RRO)**

I haven't looked at it, but I think it is important to have continuous awareness, not just during times of concern.



**Rosina Martinez of Hydrodynamics and X-ray Physics (P-22)**

Do not allow students or any part-time Q-cleared employees to work on classified, give drug testing to everyone and enforce [ongoing] security training.



**Brian Henneke of Computing Operations and Support (HPC-2)**

Yes I have. One thing we have discussed with our building security staff is some kind of device to detect personal cell phones before they go behind the fence. The technology exists, so it is possible to do that. It would prevent people from forgetting they have a non-Laboratory cell phone on them.



**Nandakishore Santhi of Complex Systems (T-13)**

I am a new hire, so I am not used to all the security. I think group leaders and mentors should explain the security rules at the Lab. Also, your roommates can tell you if something is inappropriate.



**Curtis Thomson of Office Cost and Schedule (CS-OCS-2)**

I haven't accessed the Web page, because I don't do any classified work. I do think though that on the national level there needs to be some emphasis on the global impact of national security, like we had during the Cold War. One solution would be not to just train staff to follow procedures, but to provide some context as to why it is important to do so.

*Editor's note: The Security in Action Web site was established to help all employees more readily find essential security information and guidance — it is not just for Laboratory employees who do classified work. For more information, see Page 3.*



From left to right are Tony Grieggs, group leader for Water Quality and RCRA; Tina Sandoval, deputy group leader for Water Quality and RCRA and a member of the Director's Development Program; and Diana Webb of the Policy Office and DDP volunteer coach talk following the third DDP commencement ceremony. Photo by Presley M. Salaz, Records Management and Media Services and Operations

## Director's Development Program Graduation ceremony recognizes potential future Lab leaders

Eighteen future Lab leaders recently graduated from the Director's Development Program Class of 2005. Deputy Director John Mitchell was the featured speaker at the third DDP commencement.

The 2005 DDP class includes **Joysree Aubrey** of Applied Modern Physics (P-21), **Karen Bintz** of Applied Electromagnetics (IAT-2), **Jay Carnes** of Gas Transfer Systems (W-7), **Linda Ann Gallegos** of Cost/Schedule (CS-OCS-2), **William Gillison** of Plans and Programs S-1 (SEC-PPS1), **Daniel Holden** of Nuclear Nonproliferation (NN), **Albert Jiron** of Acquisition Services Management (ASM-DO), **Dale Land** of Network Engineering (CTN-5), **Leon Lopez** of Data Management (IST-IS11), **Catherine Padro** of Sensors and Electrochemical Devices (MPA-11), **Steven Renfro** of Weapons Systems (W-DO), **Tina Sandoval** of Water Quality (ENV-RCRA), **Raeanna Sharp-Geiger** of Materials and Chemistry Facility Operations (MCFO-DO), **John Tapia** of Physics (P-DO), **Bart Torres** of Deployed Services (SEC-DSS9), **Cheryl Wampler** of

Weapons Physics (ADWP), **R. Scott Willms** of Chemical Sciences and Engineering (C-CSE), and **Deidre Witherell** of Design Engineering Services (FME-DES).

"The DDP is an element in a strategy to enhance the overall quality and effectiveness of leadership at the Lab," said **John Perreault** of Leadership Supply (HR-LS). "DDP addresses the need to better prepare individuals to effectively transition to progressively higher levels of management."

The program lasts 12 to 18 months and includes individual assessments and leader potential analyses, a director's leadership workshop, competency workshops on relevant topics, brown-bag learning exchanges, cohort learning sessions, developmental assignments, and ongoing mentoring and coaching on a one-on-one basis.

Members of the Executive Board and other invited guests also were present at the DDP commencement.

For more information about the Director's Development Program, go to <http://int.lanl.gov/orgs/hr/success/index.shtml> online.

## In Memoriam

### Patrick Campbell

Patrick Campbell died September 23. He was 81.

Campbell began working at the Laboratory in 1955 as a staff member in the former GMX Division. At the time of his retirement in 1985, Campbell was working in the former Design Engineering (WX) Division.

Campbell received a bachelor's degree in chemical engineering from Michigan College and served in the Army during World War II.

He is survived by sons James of Los Alamos and Claud of Marathon, New York; daughter Selma Arnold of Santa Fe; nine grandchildren; and ten great-grandchildren.

**For Laboratory closures, delays or early dismissal information, call UPDATE at 667-6622 or 1-877-723-4101 (toll free).**





## November service anniversaries

### 35 years

Sylvia Herrera, OM-OMO  
Tom Ortiz, P-24  
Theodore Reed, D-6

### 30 years

J. Benito Garcia, IRM-DC  
Patricia Garcia, IRM-RMMSO  
Annette Houston, ASM-PUR  
Susie Martinez, EFO-DO  
Christopher Morris, P-25  
James Roach, DHS  
Phil Romero Jr., OS-PT  
Jeffrey Roybal, W-11  
Margaret Sanchez, CFO-DISB  
Peter Sandoval, WT-3  
Jose Serna, MPA-NHMFL

### 25 years

Stephen Blair, ADTR  
Louis Borrego, PF-MS  
Meredith Coonley, IRM-CAS  
F. Coyne Prenger, AET-1  
Deborah Davis, W-DO  
Joel Farnham, IAT-2  
Eric Ferm, HX-3  
Paul Giguere, T-03  
Sharon Hickey, POL-DO  
Pamela Montoya, RP-2  
Robert Ortiz, WT-DO  
Michael Ryan, EA-AUDITS

### 20 years

Roger Bracht, WT-4  
Christine Chandler, LC-LM  
Deann Dierks, RP-1  
Olivia Pincheira, OM-MS  
Robert Quintana, AET-3  
Scott Richmond, MST-16  
Linda Riley, IAT-1  
Sharon Seitz, N-2

### 15 years

Michael Carter, ISR-3  
Doris Dworschak, CFO-2

Frank Garcia, WCM-3  
Bryan Henson, C-PCS  
Mary Jo Waltman, B-2  
Patrick Longmire, EES-6  
Terry Lowe, CAO-AM  
Leslie Moore, CCS-6  
John Mosher, P-21  
Thomas Nolen, ER-ISO  
Andrea Palounek, P-DO  
Terrance Vergamini, RP-1  
Robert Villarreal, PMT-1

### 10 years

James Ahrens, CCS-1  
Frederick Bryant, W-2  
Steven Clement, N-2  
Jonah Colman, EES-2  
Jeffrey Dare, ER-RS  
Carl Greeff, T-1  
Ray Guffee, AET-1  
William Hlavacek, T-CNLS  
Mervyn Kellum, AET-4  
Deborah Lewis, PADWP  
Amit Misra, MPA-CINT  
John Moulton, T-7  
Andrew Nunn, C-NR  
Bart Parliman, HPC-3  
Mark Schraad, T-3  
Thomas Stepan, W-10  
Richard Stupka, SB-PF  
Raymond Thompson, ER-RS  
George Valdez, WT-8  
Joseph Wermer, AET-3  
Xiaoning Yang, EES-11

### 5 years

Melissa Abeyta, SEC-PSS6  
Lee Baca, SEC-SA5  
Delilah Baldonado, ERSS-DO  
Tracy Baros, SEC-PSS6  
William Bearden Jr., W-DO  
Donald Bourcier, WT-9  
Ralph Bray, N-2  
Diane Crane, SEC-SIS2  
Melissa Douglas, X-2-AFS

John Dukowicz, T-03  
Louis Ferran, WS-FWS  
Laurie Gallegos, CAO-DS  
William Gibson, D-6  
Roland Gille, EWMO-CA  
Elizabeth Goldsmith, STBPO-RL  
David Guerin, EES-12  
William Hardesty, ERSS-GS  
Michael Irish, MSS-TA55FO  
Ricky Jimenez Sr., HPC-2  
Susanne King, IRM-CAS  
Hugh Kirbie, ISR-6  
Norman Kurnit, P-24  
Morgan Lavelle, WT-9  
Rudy Lujan, FME-DES  
Loretta Maestas, W-DO  
Wendy Mares, CFO-3  
Benjamin Martinez, EWMO-RLW  
Dino Martinez, WS-FWS  
Tamera Meyer, DIR  
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John Putnam, IAT-3  
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Denise Sessions, IRM-CAS  
Rebecca Settle, N-4  
Robert Shirey, ISR-2  
Edmond Shivers, WT-9  
Brian Skibyay, AET-6  
Bradley Sorensen, CTN-1  
Richard Taylor, IAT-2  
George Tompkins, D-6  
Susie Trujillo, IST-APPS3  
Joan Vonharders, SEC-PSS6  
John Wilcox, ERSS-RS  
Darrick Williams, LANSCE-LC



## This month in history ...

### November

**1512** — The ceiling of the Sistine Chapel in Rome, one of Italian artist Michelangelo's finest works, is exhibited to the public for the first time.

**1782** — The United States and Great Britain sign a peace treaty in Paris, formally ending the Revolutionary War.

**1848** — The first medical school for women opens in Boston.

**1895** — George B. Selden is granted the first U.S. patent for an automobile.

**1895** — Wilhelm Roentgen discovers X-rays.

**1917** — The National Hockey League is formed, with the Montreal Canadiens, Montreal Wanderers, Ottawa Senators, Quebec Bulldogs, and Toronto Arenas as its first teams.

**1921** — Exactly three years after the end of World War I, the Tomb of the Unknowns is dedicated at Arlington Cemetery in Virginia during an Armistice Day ceremony presided over by President Warren G. Harding.

**1935** — The board game Monopoly is released.

**1940** — Only four months after its completion, the Tacoma Narrows Bridge in Washington State suffers a spectacular collapse.

**1942** — J. Robert Oppenheimer is chosen to build and lead the secret bomb-design facility at Los Alamos.

**1954** — Nobel Prize-winning physicist Enrico Fermi, the first man to create and control a nuclear chain reaction, and one of the Manhattan Project scientists, dies in Chicago at the age of 53.

**1958** — Greece's Queen Fredericka, left, and daughter Princess Sophie visit the Laboratory in November. They toured the Health Research Laboratory, the Physics Building and Project Sherwood facilities.



**1962** — First ever spacecraft to Mars, Mars 1 is launched.

**1969** — NASA launches Apollo 12, the second manned mission to the surface of the Moon.

**1971** — Intel releases world's first microprocessor, the 4004.

**1974** — The Laboratory and adjacent lands are designated a National Environmental Research Park by the Energy Research and Development Administration.

**1981** — The space shuttle Columbia is launched for the second time. This was the first time a space vehicle was used more than once.

**1985** — President Ronald Reagan and Soviet leader Mikhail Gorbachev hold their first summit meeting.

**1989** — The Berlin Wall is opened after standing for 28 years as a symbol of the Cold War. The 27.9 mile wall had been constructed in 1961.

**1991** — The Lab-developed HIPPI is accepted as the first national standard for gigabit-per-second data transmission.

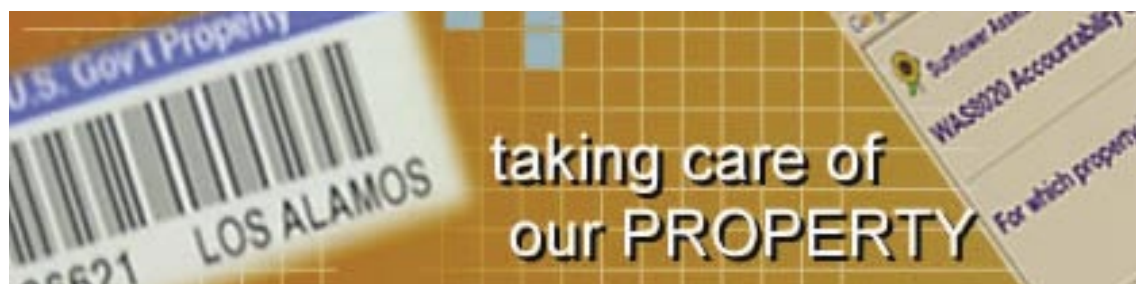
**1992** — Members of the Los Alamos and Russian nuclear weapons programs meet at the Lab and agree to conduct collaborative research.

**1996** — An explosion and fire occur at the CMR Building.

**2002** — President George W. Bush signs the Homeland Security Act into law.

*The information in this column comes from several sources including the online History Channel, the Newsbulletin and its predecessors, the atomic archive.com, Echo Vitural Center, Science & Technology, Real History Archives, and Carey Sublette, "Chronology for the Origin of Atomic Weapons" from www.childrenofthemanhattanproject.org/MP\_Misc/atomic\_timeline\_1.htm.*

*Submissions are welcome. Please be sure to include your source.*



## Lab employees complete Property Management Certification Program

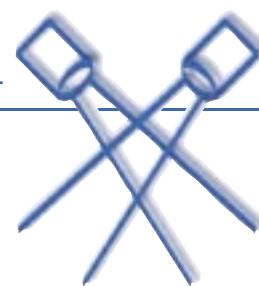
Twenty-eight Laboratory employees have completed coursework necessary for Property Management Certification through Northern New Mexico College.

Working together, Property Management (ASM-PM) and NNMC developed a curriculum for Property Management Certification. The curriculum requires 20 credit hours including, Property Management Baseline Training, Business English, Business Communication, Business Ethics, Math, Fundamentals of Excel, and Administrative Systems and Procedures.

The program began in summer 2005 and was completed last summer by Lee Abeyta, Leonard Archuleta, Rebecca Atencio-Flores, Joseph Baca, Mike Bailey, Maxine Bustos, Angela Duran, Melissa Garcia, Jennifer Lara, Abelino Lovato, Bernadette

Martinez, Petrita Montano, Frank Naranjo, Veronica Pacheco, Steve Remde, Jeanne Romero, Rick Romero, Franklin Salazar, Mark Salazar, Victor Salazar, Julian Sandoval, Patrick Sullivan, Ralph Trujillo, Chris Valdez, Vincent Valdez, Rick Valerio, Tony Valerio, and Jesse Vigil, all of ASM-PM.

"Partnering with Northern New Mexico College afforded us an excellent opportunity to design a property management certification program tailored to the occupational functions at the Lab," said John Tapia of ASM-PM. "Now, our employees have a new and highly applicable option for professional development, which in turn benefits the Laboratory and our customers by making property management an even more effective organization."



With an eye for detail, Lisa Dougherty, a postdoctoral associate on the Structure/Property Relations, enjoys both transmission electron microscopy and fiction writing. Photo by Karen E. Kippen, Communication, Arts, and Services

# The examined life

by Karen E. Kippen, Communication, Arts, and Services

Lisa Dougherty enjoys investigating the details — whether that is a metallographic sample on a transmission electron microscope or the life of a fictional character on the printed page.

A postdoctoral associate on the Structure/Property Relations' (MST-8) dynamic properties team, Dougherty recently published her first book, *The Concertmaster: Lure of the Stringed Siren*. The story of a young, gifted violinist who stumbles into a violent altercation and finds his life altered, the novel is the result of Dougherty's keen observation skills, which have aided her as both a writer and a scientist.

## Delving into the details

Raised in a family of engineers, Dougherty studied piano and classical guitar as a child. She planned to combine her interests in music and science as a sound engineer, and with a performance scholarship to Indiana's Ball State University, she originally pursued a degree in music engineering technology, augmenting her studies with a minor in physics.

"I like the fundamental sciences and that all starts with physics. I like getting down to the bottom of things," said Dougherty, who went on to earn a bachelor of science in physics and a bachelor of music in classical guitar.

As a materials science graduate student at the University of Illinois, Champaign-Urbana, she discovered a passion for working on the transmission electron microscope (TEM), honing her skills with a research project investigating the mechanisms operating during dynamic recrystallization in an aluminum alloy.

"Some students seemed to view electron microscopy as a tedious chore to suffer through in order to get the data," she said. "I, on the other hand, found that I enjoyed the microscopy much more than the data crunching at the end." To Dougherty, the TEM "is just the coolest instrument in the world. It's got such great resolution," she said. "You can look through any material and see what is going on inside."

With a doctorate in materials science and engineering with metallurgy specialization, Dougherty moved to Los Alamos in 2001 when her husband, Eugene, accepted a position at the Laboratory as a computer software engineer.

When a postdoctoral position on MST-8's Dynamic Properties team became available, Dougherty said it was "the perfect fit."

"Lisa has great attention to detail," said Ellen Cerreta, Dougherty's mentor and an MST-8 technical staff member. This skill "not only allows her to make important observations as a microscopist, it also causes her to perform carefully throughout experiments that address specific questions important to meeting project deliverables."

Dougherty's work is supported by the Joint Munitions Program, a program funded by the Department of Defense and the Department of Energy.

## Literary escape

Writing fiction allows Dougherty to peer into another realm — the fictional world of her characters — their motivations and experiences.

"I've always been creating characters in my head," said Dougherty, who views writing as an escape.

"The Concertmaster" is a two-book story that Dougherty spent more than two years writing as she cared for her two young children, Allegra and Sean. For the story, she did extensive research, including consulting with a psychologist at a medium-security penitentiary, touring the facility, and interviewing inmates.

Although she develops an outline before beginning to write, Dougherty allows herself to be open to unexpected twists which may change the plot — something that happened in *The Concertmaster*.

"During the final edits of the second — and final — book of the series, I completely changed the ending," she said. And like a true scientific observer, she said she tries "not to force the story to go in any direction. I just let it flow where it naturally should flow, which sometimes doesn't follow a nicely crafted outline very well."

Dougherty said she views her novel writing as something that "gives balance to a career centered on science ... I think writing helps my work at the Lab because I believe the best scientists are extremely creative people, so it is useful to exercise your creativity."

