

Thermal imaging technique helps predict cancer treatment response

JARED SAGOFF

WHEN University of Chicago head-and-neck cancer researcher Cindy Bajda felt a raised bump on the bottom of her mouth, she'd spent too much time around oral cancer patients to have any doubt as to her diagnosis.

"I knew what it was," she said. "I knew I had buccal cancer, and I knew what was likely to happen to me."

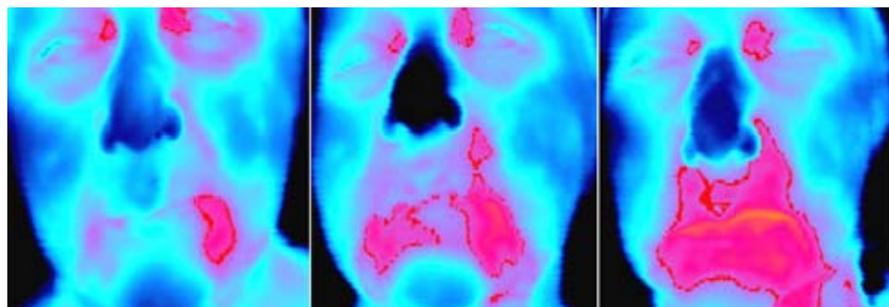
While buccal and other head-and-neck cancers are treatable and frequently curable, patients who undergo the necessary treatment regimen — a combination of radiation and chemotherapy — frequently develop unpleasant side effects. One of the most common and painful of these, oral mucositis, involves the inflammation and ulceration of the mucous membranes of the mouth and soft palate. These sores can make speaking, eating or even opening the mouth extraordinarily painful. If patients experience especially severe toxicity, they may temporarily lose the ability to taste or may even need to be fed through a tube.

Thanks to a recent scientific development, however, other patients with head-and-neck cancers may soon be able to anticipate how severe their reaction to treatment will be. The innovation, a non-invasive imaging technique, uses the body's own thermal signature as an indicator of the degree to which patients may suffer the toxic effects of cancer therapy.

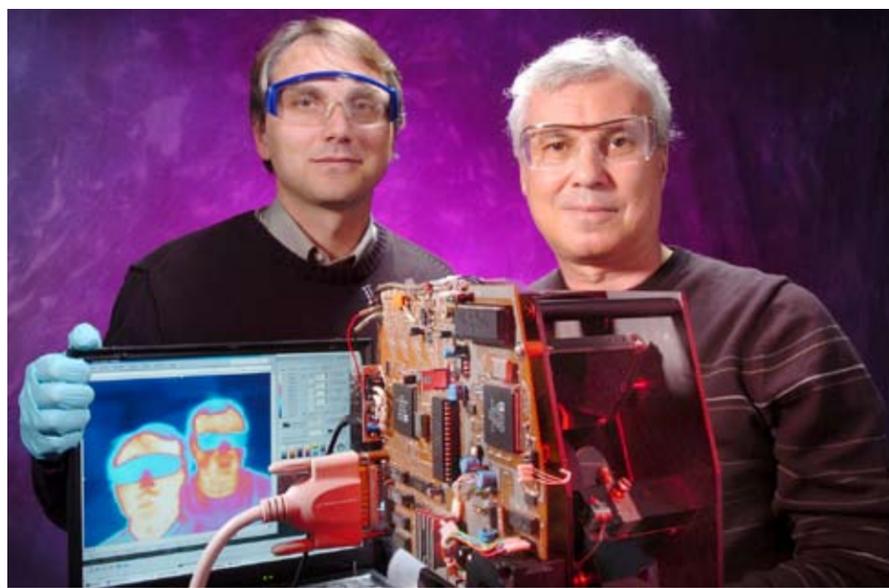
As part of the ongoing National Cancer Initiative, researchers at Argonne have teamed up with oncologists at the University of Chicago Hospitals to use infrared imaging of the head and neck to predict which patients have the highest risk for severe mucositis. Patients who show local increases in temperature around the tumor site in the immediate wake of the initial round of treatment may be more likely to suffer later side effects, said Ezra Cohen, an oncologist at the University of Chicago Hospitals who will head up the clinical side of the project.

Cohen, in collaboration with Valentyn Novosad, a principal investigator in Argonne's Materials Science Division, has already run a pilot study of six patient volunteers, which they parlayed into a successful grant proposal to the National Institutes of Health that will enable them to undertake a two-year study of 34 patients with head and neck cancers.

Oncologists use radiation therapy as an aggressive, but crude, method for fighting cancer. Although the radiation beam is typically focused on the area that contains the tumor, it cannot tell the difference between healthy and



An infrared image of a patient's head taken before (left) and after (right) a round of chemotherapy. The growth of the warmer, pinker, areas around the mouth indicate the likely onset of mucositis.



Argonne materials scientists (from left) Valentyn Novosad and Volodymyr Yefremenko pose in front of their infrared camera. Cooler temperatures are represented on the screen as blues and pinks, while warmer temperatures are shown as yellow. Photo by George Joch.

malignant cells. As a result, normal tissues suffer collateral damage as tumors are zapped. "At this point," Cohen said, "we have no treatment that allows us to kill tumor cells without also damaging normal tissue. We accept the toxicity because it's a necessary part of the intended cure, and we know that it eventually gets better."

That was not much consolation to Bajda, who said that the familiarity she had bred with the disease by having studied it greatly helped to sustain her during the extended period where her mouth was so riddled with sores that she couldn't eat solid food, lost close to 50 pounds and was threatened with a feeding tube. "The chemotherapy was nothing compared to the mucositis; it was just so much more painful," she said. "Since there's nothing on the market that can alleviate the symptoms, just having the mental preparation is a huge advantage."

In order to detect possible toxicity, Novosad and Argonne physicist Volodymyr Yefremenko developed a prototype infrared camera that detects temperature gradations as small as one-twentieth of a degree Celsius. Typically, the tumor appears warmer than the surrounding tissue, but for

some patients the infrared image taken after the first round of chemo- or radiation therapy shows a larger region of elevated temperature around the tumor site, indicating the beginning stages of inflammation. These patients, Cohen said, are the ones most likely to encounter problems with mucositis down the road, even if they are not yet symptomatic. Argonne scientists are developing a standardized approach to quantify changes in thermal signature of individual patients during therapy.

At early points in their treatment, some past patients remained either uneducated or in denial as to the severity of probable side effects, according to Bajda. "I'd talk to some of our patients, and they'd look at me and tell me, 'this isn't going to happen to me.' And when it did happen to them they were the ones who suffered the most because they didn't prepare."

Without this technology, doctors would have no way of telling which patients had the greatest risk for developing mucositis, Cohen said. "Right now, I can only say to a patient that there is a small chance of severe toxicity, a good chance of moderate toxicity (See "Mucositis" on page 3)

Conclave to foster discussion on strategic initiatives

ALL INTERESTED Argonne researchers are invited to a Laboratory-Directed Research and Development (LDRD) Strategic Initiatives Conclave Friday, Jan. 25, 2008, in the Building 402 Auditorium. The conclave will be held from 9-11 a.m.

Those attending will hear about and discuss the laboratory's strategic initiative areas and progress on strategic planning. Argonne Chief Scientist Michael Turner will present an update on FY 2008 LDRD strategic initiatives in the context of laboratory strategic planning. Strategic initiative leaders will give overviews of their initiatives and their plans for FY 2009.

Strategic initiative open-topical meetings will be held in February 2008. The schedule will be announced in coming weeks. These meetings are meant to tune and refine initiatives and allow newcomers to get involved.

"The laboratory's portfolio of strategic LDRD investments are meant to position the laboratory to meet current and future needs of the U.S. Department of Energy and the nation," Turner said. "An important part of the process is input from Argonne researchers. I encourage you to attend the conclave and the upcoming open-topical meetings." ■

New Theory and Computing Sciences Building To Be Constructed

A NEW Theory and Computing Sciences Building will be constructed at Argonne, solidifying the fastest growing research program in its history.

"From its very beginning, computing has been an aid to the advancement of science; however, somewhere along the line there was a sea change," said Michael Turner, Argonne's chief scientist. "Computing is no longer just an aid, it is essential to almost every aspect of science and engineering across all disciplines. By focusing on the most challenging problems, this facility will enable breakthroughs across the broad frontier of science and engineering, benefiting both science and society. While we can imagine some of the breakthroughs that will come early on, we can only dream about those that will come over the long lifetime of this facility."

Located on the northern boundary of Argonne's secure perimeter, the approximately 200,000-square-foot facility will be home to more than 600 laboratory employees and will house research groups using one of the fastest (See "TCS building" on page 3)

'Hybrid' semiconductors show zero thermal expansion; could lead to hardier electronics and optoelectronics

DAVE JACQUÉ

THE FAN in your computer keeps the microprocessor chip from heating until its component materials expand, inducing cracks that interrupt the flow of electricity — and not incidentally, ruin the chip. This thermal expansion can also separate semiconductors from their substrates, reduce performance by changing electronic structures, or warp delicate crystals that emit laser light.

Recently published research by scientists at the National Renewable Energy Laboratory, academic institutions and Argonne have shed light on a semiconducting material with zero thermal expansion (ZTE). The research may play a role in the design of future generations of electronics and optoelectronics that can withstand a wide range of temperatures.

Traditional interests in ZTE materials have largely been in areas such as optics, heat-engine components and kitchenware. ZTE materials with applications in non-conventional areas such as electronics and optoelectronics are rare; most are glasses, which do not work well in electronics applications. The hybrid inorganic-organic semiconductor investigated in this work is a multifunctional semiconductor that has previously been shown to possess superior electronic and optical properties. The work also suggests an alternative route to designing materials with any desired positive or negative thermal expansion.

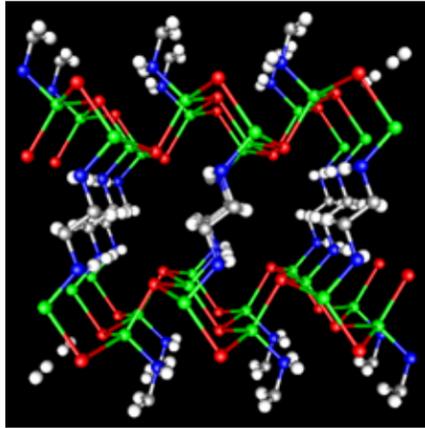
"It's a merger of inorganic and organic materials," said Zahirul Islam (XSD), "which form a fully coherent three-dimensionally ordered crystal. Normally inorganic and organic materials don't work very well together, but here they are working together to display these remarkable properties."

The materials under study form alternating organic and inorganic layers that work together to produce these effects. One contracts while the other expands, and the net effect is zero.

"This work suggests a novel approach to design the thermal expansion — from positive to negative, including zero — in a nanoscopic scale by assembling nano-scale units in an ordered manner," said principal investigator Yong Zhang of the National Renewable Energy Laboratory. "The idea has only been demonstrated for tuning thermal expansion in one dimension, and study was limited to one or two materials. Next we would like to extend the idea to higher dimensions (i.e., ZTE in more than one dimension) and explore more inorganic-organic combinations."

These hybrid materials hold promise for high-efficiency semiconductor lasers, ultrathin and flexible solar cells and light-emitting and detecting devices. It is possible to "dope" the materials (adding small amounts of other compounds) to form transparent conducting materials, Zhang said.

While chemical and thermal stability are two major problems for most hybrids, the hybrid nanostructures investigated in this work are found to be exceptionally stable in the air, even under the



The crystal structure of β -ZnTe(en)_{0:5}, determined by single-crystal X-ray diffraction. Two-monolayer-thick ZnTe slabs are interconnected by ethylenediamine (C₂N₂H₈) molecules bonded to zinc atoms. Zn-Green, Te-Red, N-Blue, and C-Gray. Hydrogen atoms are omitted for clarity.

illumination of an ultraviolet laser.

"Not only do the crystal structures remain unchanged," Zhang said, "but their electronic and optical properties remain after a few years of air exposure or upon heating to more than 200 degrees C, a feature attributed to the strong covalent bonding throughout the structure."

This work involved multiple institutes with complementary strengths and capabilities. Scientists at NREL initiated and organized the project. The materials were synthesized by Jing Li's group at Rutgers University. Critical X-ray diffraction measurements to determine the ZTE effects were carried out at Argonne's Advanced Photon Source (XOR beamlines 1-BM-C and 11-ID-C). Other key APS researchers are Yang Ren and Peter L. Lee of XSD. Theoretical modeling on the phonon (vibrational) spectrum, crucial to the understanding of the experimental findings, was performed by scientists at University of Arkansas. Collaborators at the University of Colorado at Boulder also made important contributions to the work. ■

For details, see "Zero Thermal Expansion in a Nanostructured Inorganic-Organic Hybrid Crystal" Y. Zhang, Z. Islam, Y. Ren, P. A. Parilla, S. P. Ahrenkiel, P. L. Lee, A. Mascarenhas, M. J. McNevin, I. Naumov, O. H.-X. Fu, X.-Y. Huang, and J. Li; Published Nov. 19, 2007, in *Physical Review Letters* (vol 99, 215901).

RADIATION BADGE EXCHANGE TO BEGIN THIS WEEK

The quarterly radiation badge exchange will begin this week. Return fourth quarter radiation badges to their assigned rack or to the local badge distribution office by Friday, Dec. 21. If working beyond that date, return the badge by your last workday of the year. On-time return of the badges will help assure timely reporting of radiation exposures and minimize processing costs. Users with questions may contact External Dosimetry at ext. 2-3355.

Holiday shutdown to affect many site services

THE CHRISTMAS-NEW YEAR closing at Argonne begins Friday, Dec. 21, and continues through Tuesday, Jan. 1. Only employees required to properly maintain the laboratory's facilities will be scheduled to work.

- Paychecks: Staff employee paychecks will be distributed or deposited Thursday, Dec. 21. Biweekly employee paychecks will be distributed or deposited Thursday Dec. 21, for the two-week period ending Sunday, Dec. 10.
- The deadline for approving timecards for the two-week period ending Dec. 23 will be Friday, Dec. 21, which will be paid on Jan. 4, 2008. For employees authorized to work Dec. 22, Dec. 23 and Dec. 24, time should be entered before Friday, Dec. 21.
- Sick leave: Non-occupational disability (sick leave) will be paid during the closing period only to:
 - Employees scheduled to work during the close who are ill on a scheduled work day and have a sick leave balance, or
 - Employees confined in a hospital who have a sick leave balance.
- For nonexempt employees, the Medical Department must receive any physician's notices for approval by Thursday, Dec. 20, to assure payment on Jan. 4, 2008.
- If an employee currently on disability leave is to be scheduled to return to duty during the holiday closure, an appointment to be seen in the Medical Department before Friday, Dec. 21, must be obtained in order to obtain prior medical clearance. It will not be possible to arrange for medical evaluation when the Medical Department is closed.
- If you require physician consultation, advice or assistance during the holiday closing, contact the Fire Department officer in charge at ext. 2-6131. In the case of an emergency, call 911.
- Travel: GetThere, the Argonne online booking tool, will operate normally throughout the holiday shutdown. However, the Omega World Travel on-site office will be closed from 5 p.m. on Friday, Dec. 21, until 8:30 a.m. on Wednesday, Jan. 2, 2008. Remember, all travel must be approved by division management before departure.
- Because the on-site office will be closed during the holiday break, Omega after-hours agents can be reached at the following numbers for assistance:
 - During non-holiday week days (8:30 a.m. - 5 p.m. CST): (800) 856-9224
 - During holidays, weekends and after 5 p.m. on non-holiday weekdays: (888) 281-6412 (reference the following code when calling: S*73SA-ANL)
 - Collect call from outside the United States for after-hours emergencies: (414) 817-6021 (Reference the following code when calling: S*73SA-ANL)
- Travel authorizations for trips starting Dec. 21, through Jan. 7, 2008, must be submitted to the Travel Office by noon on Dec. 14.
- The Guest House Restaurant will close for the holiday at 1:30 p.m.

Friday, Dec. 21, and reopen at lunch Monday, Dec. 7.

- The 401 Grill will have shortened hours during the holiday break:
 - Friday, Dec. 21: 11:30 a.m. to 5 p.m.
 - Saturday, Dec. 22 - Sunday, Dec. 23: 11:30 a.m. to 4 p.m.
 - Monday, Dec. 24 - Tuesday, Dec. 25: Closed
 - Wednesday, Dec. 26 - Sunday, Dec. 30: 11:30 a.m. to 4 p.m.
 - Monday, Dec. 31 - Tuesday, Jan 1, 2008: Closed
 - Wednesday, Jan. 2 - Sunday, Jan. 6, 2008: 11:30 a.m. to 4 p.m.
- The 401 Grill will return to normal working hours on Monday, Jan. 7. ■

SECURITY: LOCK UP BEFORE LEAVING FOR SHUTDOWN

Laboratory employees are strongly encouraged to secure their valuable equipment, offices and laboratories during the holiday shutdown to minimize or prevent theft, according to Dave Metta, deputy director of Safeguards and Security.

The holiday shutdown, Friday, Dec. 22, through Monday, Jan. 1, provides an increased opportunity for theft because there are fewer employees on site, reducing the chance of detection and apprehension, said Metta.

"The laboratory's first line of defense against criminal activity is employee awareness and reporting," Metta said. "Protective force personnel can't be everywhere all of the time. Successful site security is in large part dependent on employees observing and reporting suspicious and criminal activity."

"Reasonable, common-sense deterrents" are the second line of defense, he said. In general, and especially during the shutdown period, employees should:

Lock buildings, office doors, desks, filing cabinets and storage areas.
Check double doors: Some have a brass bolt-lever on the upper and lower inside edge of the left door in addition to the key lock on the right.

Secure all keys and attractive, valuable and easily transportable items. Locking cable "tie-downs" should be used on all computer equipment.

Remove valuable items from places where they'll be unattended: docks, hallways, wire mesh storage areas or other areas that don't provide "six-sided, lockable protection." These items should be secured whenever possible in areas where they can't be seen by passers-by.

For assistance in securing equipment or areas, contact the Lockshop at ext. 2-5742.

To report crimes in progress, call 911. Report suspicious activity to the Protective Force at ext. 2-5731 or ext. 2-5730.

Additional building patrols and other preventive measures will be in place during the shutdown. "But for these efforts to be truly effective, we need the assistance and involvement of each and every employee," Metta said.

For more information on property protection, call ext. 2-4888.

Mucositis

(Continued from page 1)

toxicity, and a small chance of very little toxicity. The problem has been that we've had no way to predict upfront who will suffer the most."

If doctors can use this technology to detect that a patient is likely to suffer a great deal of toxicity, it may enable them to tailor their treatment regimens more closely to patients' individual needs, according to Cohen. "If I knew that a patient would encounter severe toxicity, I might want to reduce the doses of chemotherapy a little bit. Or I might want to put in a feeding tube early

on knowing that they're going to have trouble eating and drinking down the road. Or I might want to have very early consultations with physical therapists knowing that these are patients who are going to have trouble."

The project, Novosad said, is a part of larger synergistic R&D effort in MSD focused on advancing high-sensitivity detector and imaging technologies for a broad spectrum of applications, including medical diagnostics, homeland security, materials science and astrophysics. ■

NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS TO HOST WORKSHOP

Feb. 12-13, 2008, the National Center for Supercomputing Applications will host a workshop on "Building the Data Center of the Future: Effective Energy-Efficient Design." The workshop will bring together experts from research centers, the information technology industry and engineering, consulting and architecture firms to explore the challenges involved in planning, designing, engineering, constructing, monitoring and maintaining the data center of the future.

The Data Center workshop is free, but advance registration is required. More information registration is available online at www.ncsa.uiuc.edu/Conferences/DataCenter.

Sponsors for the workshop include NCSA, EYP Mission Critical Facilities and IBM.

ARGONNE APPAREL FOR SALE

Argonne T-shirts and sweatshirts are available for purchase at the Division of Educational Programs in Building 223, Room M120, from 8 a.m. to 4:30 p.m. Monday through Friday.

Sweatshirts are \$18 and come in black, navy blue, red, forest green, light blue and khaki. A limited supply of T-shirts is also available. T-shirts are \$12 and come in black, navy blue, denim, dark brown, forest green, kiwi, gray, pink and white. Both are available in sizes adult small to XL.

Only cash will be accepted.

HOME PAGE, INFO-LINE WILL BE UPDATED DURING SEVERE WEATHER EVENTS

If severe winter weather strikes overnight, employees may be asked to delay their arrival until conditions improve. If laboratory operations are affected by the weather, information will be immediately posted on the Argonne home page (www.anl.gov) and on the Argonne Info-Line (630-252-INFO [4636]).

OPEN ENROLLMENT CONFIRMATIONS TO BE MAILED

Confirmation sheets from the 2008 open enrollment will be sent by mail to employees' home addresses. Employees who made changes during open enrollment for medical or flexible spending accounts should receive their confirmations at home in the next week. Employees who do not receive 2008 confirmation of changes by Dec. 17, should contact Marge Vaught at mvaught@anl.gov.

SIGN-UP IN PROGRESS FOR YOGA AND CORE STABILITY TRAINING CLASSES

Eight-week yoga and core stability training classes are open to all employees.

- Yoga classes will be held Tuesdays at 12:30 p.m. or 5:15 p.m. from Jan. 8 - Feb. 26, 2008, in the Building 200 K-Wing. The eight-week session costs \$48.
- Core stability training will be held Mondays from Jan. 7 - Feb. 25 or Fridays from Jan. 11 - Feb. 29 at 12:30 p.m. in the Building 200 K wing. The class, which runs for eight weeks, costs \$60.

The deadline to sign up for either class is Thursday, Jan. 3, 2008. Forms are available in the Medical Department.

ARGONNE CHILD DEVELOPMENT CENTER OFFERS ALTERNATIVE FOR SCHOOL HOLIDAYS

The Argonne Child Development Center will offer its Discovery Days Monday, Dec. 24 - Friday, Jan. 4. This program is available to children ages 6-12 years old to cover the days when elementary schools are closed throughout the year.

Registration can be done by phone at ext. 2-9601 or by e-mailing childcare@anl.gov in advance of the day you would like to enroll your child. If a child's school is closed for a day not listed, contact the center and additional days might be covered on a case-by-case basis. Tuition is \$50 a day and includes two snacks and lunch. A few forms are required to enroll children who have not previously attended the Discovery Days program. The center is open 7:30 a.m. - 6 p.m., Monday through Friday.

FLEXIBLE SPENDING ACCOUNT DEADLINES NEAR

Participants in the lab's flexible spending accounts (FSAs) have until Dec. 31 to incur expenses for 2007 health care and dependent day care flexible spending accounts.

Although money in the flexible spending accounts must be spent by Dec. 31, employees have until March 31, 2008, to claim those 2007 expenses for reimbursement from WageWorks. Now is the time to review your WageWorks balance to minimize the chance of forfeiting any money. Accounts can be accessed online at <http://wageworks.com>.

Those enrolling in FSAs in 2008 and who also participated in 2007 should hold on to their current WageWorks Visa card. As of Jan. 1, 2008, the 2008 balance will be available on the card and it will no longer work for 2007. If the card is discarded or lost, participants must contact WageWorks at (877) 924-3967 to request a new one.

ARGONNE EXERCISE CLUB MEETS REGULARLY

The holidays are here, which might mean putting on some unwanted weight. The Argonne Exercise Club's calendar is online at www.argonneclub.anl.gov/aec/CurrCalendar.htm.

TCS building

(Continued from page 1)

computers — the IBM Blue Gene/P — to answer huge scientific questions.

"The research enabled by the TCS building will touch many areas of science and society — from research in astrophysics and nuclear reactor design to searching for cures for Parkinson's disease and better drugs to fight antibiotic-resistant staph infections such as MRSA to long-term climate and ecosystem simulations and to a better understanding of the global carbon cycle which underpins global climate," said Rick Stevens, Argonne's associate laboratory director for computing and life sciences. "Through this new facility and through key partnerships, such as the Computation Institute, a joint endeavor with the University of Chicago, we will make headway in advancing computer science and the important application fields of today, and of the future."

Additionally, the facility will include an 18,000-square-foot centralized library, computational research labs and a conference center.

The Illinois Finance Authority has

issued economic development bonds that will provide financing for the project to a Delaware Statutory Trust, as part of a unique public-private financing and leasing agreement. By allowing private sector market forces to bear strongly in this process, this new facility should save the government more than \$10 million in life-cycle costs. Under the terms of the arrangement, thought to be the first of its kind, DOE will lease the land to the trust. The trust will hire a design/builder.

"We have worked diligently with our colleagues in the Department of Energy to leverage the economics of this innovative model of federal, state and private sector cooperation to best serve DOE's scientific mission requirements," said Argonne Director Robert Rosner. ■

MORE NEWS AND LATE-BREAKING UPDATES:
[INSIDE ARGONNE](http://www.inside.anl.gov)
www.inside.anl.gov

Winter weather brings potential for slips, falls

THE POTENTIAL for injuries — mainly slips and falls — sharply increases when snow starts to fall. Argonne's winter weather preparedness plan and procedures helps to reduce the hazards of slippery surfaces and prevent accidents throughout the winter.

"Slips, trips and falls already have a high impact on personnel safety," said EQO Director Bob McCook. "We care about all Argonne employees and want them to have a very happy holiday and enjoy the winter season without the aches and pains of a slip or fall due to winter climate issues whether they are at home, play or work. While it may seem elementary to keep discussing this topic, it is something we all need reminding of on a regular basis."

The Facilities Management and Services (FMS) Grounds and Custodial personnel have a Snow and Ice Control Plan that provides a timely response to winter weather. From Dec. 3 to March 28, a designated custodial team begins at 6 a.m. The remainder of the day crew begins at 7 a.m. before most employees arrive. If extra assistance is needed, crews may be called in earlier.

Snow is removed first from the most used roads and parking lots. Areas with high pedestrian traffic are checked throughout the day to ensure prompt removal of snow and ice. Snow and ice melt is applied around building and entrance walkways. Moisture-absorbing mats have been installed in building entrances with high traffic flow to reduce wet floors that can lead to hazardous slips.

While the laboratory takes these actions to reduce the hazards associated with winter weather at work, employees can take their own steps at work and at home to reduce their risk of injury:

Check daily weather forecasts to assist in planning for potentially hazardous driving and walking conditions.

Employees who arrive before normal business hours should be aware that snow and ice removal may still be in progress. Park in a plowed lot, if possible.

When opening a car door after parking, check the ground before taking that first step. There may be a thin layer of hard-to-see ice.

Wear appropriate winter footwear with good traction.

Keep one arm free to maintain balance when carrying items. Keep hands out of pockets to help maintain balance.

Walk along well-lit paths.

Snow sticking to shoes will melt and puddle near building entrances and in work areas, leaving tile and chair mats wet and possibly slippery.

When using stairs, hold onto railings to maintain balance.

Throughout the winter season, any employee encountering a location needing attention should contact a building manager, who will notify the appropriate FMS personnel to remedy the situation. Any falls should be promptly reported so appropriate medical attention can be provided and a review of the conditions can be conducted to ensure any deficient surface is corrected. ■

WEB PAGE, INFO-LINE BEST BET FOR OPERATIONS INFORMATION

If severe winter weather strikes overnight, employees may be asked to delay their arrival until conditions improve. If laboratory operations are affected by the weather, information will be immediately posted on the Argonne home page (www.anl.gov) and on the Argonne Info-Line (630-252-INFO [4636]).

Argonne "...for a brighter future"

Clubs brighten holidays for less fortunate

IN NOVEMBER, several Argonne clubs extended a helping holiday hand to those in need with three different charitable programs.

(Images, clockwise from top right)

Argonne's African American/Black Club hosted its annual Turkey Raffle and Fundraiser in part to benefit Clara's House, a shelter for women with unplanned pregnancies. Harold Gaines, vice president of the African American/Black Club, presents Clara Kirk, founder and CEO of Clara's House, with a donation raised from the club's fundraiser.

The Hispanic-Latino Club, in tandem with the Hispanic Heritage Organization, hosted a toy drive to provide holiday presents to underprivileged children. Surrounded by some of the dozens of toys donated by Argonne employees are (left to right) club president Argentina Leyva (CMT), Hispanic Heritage Organization President Rachel Cordero, Argonne Deputy Laboratory Director Don Joyce and Paul Cordero.

Participants in the Running Club's "Let's Put the Giving Back into

Thanksgiving" run and walk donated canned goods that were later distributed to the Hesed House in Aurora, a ministry that helps the homeless and financially stressed. Standing behind the array of nonperishables collected by the club are (from left to right) Corrie Patterson Kamiya (FMS), Lovely Pruitt (AES) and John Hyzer (HR). ■



COMMUNITY LEADERS TOUR ALCF

Community representatives recently toured the Argonne Leadership Computing Facility (ALCF), hosted by ALCF Director Ray Bair, at right. The Community Leaders Round Table is a group of federal, state and local elected representatives, union leaders, and officers of homeowners associations and other community organizations. The group meets informally with senior Argonne and DOE management every month to discuss issues of interest to the communities around Argonne. The group got to see the Blue Gene/P computer now under construction. When completed, the machine will be able to carry out 445 trillion calculations every second and will be one of the most powerful supercomputers in the world. *Photo by Bob Wiedmeyer.*

NIU to award honorary degrees to Argonne Director Robert Rosner, author and physician Abraham Verghese



Rosner

NORTHERN ILLINOIS UNIVERSITY will present honorary doctoral degrees to Laboratory Director Robert Rosner and Abraham Verghese, a best-selling author and professor of medicine at Stanford University.

Both Rosner and Verghese will receive their honorary degrees during the commencement ceremony Sunday, Dec. 16, at the NIU Convocation Center.

"We're honored to be welcoming two very distinguished and influential scholars to campus for the presentation of their honorary doctoral degrees," NIU President John Peters said. "Both Dr. Rosner and Dr. Verghese are known worldwide for their outstanding contributions in the fields of science and medicine."

"NIU awards honorary degrees on a very limited basis, recognizing people who have made great accomplishments in fields of interest to the university," added NIU Provost Raymond Alden. "Drs. Rosner and Verghese clearly meet the criteria."

An internationally recognized astrophysicist, Rosner has been director of Argonne since April 2005 and previously served as chief scientist at the laboratory. His leadership and foresight in addressing national needs in science and engineering are widely recognized. Rosner is among the country's leading thinkers in energy research and development, accelerator science, computational science and nanotechnology, and he serves on numerous scientific advisory committees in the United States and abroad.

"Dr. Rosner has been the leading proponent of collaborations between Argonne and national laboratories and universities, including NIU," said Rathindra Bose, vice president for

research and dean of the Graduate School.

"The university's collaborations with Argonne have provided graduate and undergraduate students with access to unique and revolutionary experimental tools for basic research in science and engineering," Bose added. "As laboratory director, Dr. Rosner also has supported joint appointments with NIU of scientists and joint fellowships for NIU graduate students."

Rosner holds a Ph.D. in physics from Harvard University. He served as chairman of astronomy and astrophysics at the University of Chicago from 1991 to 1997, and since 1998 has been the university's William E. Wrather Distinguished Service Professor. He was elected to the American Academy of Arts and Sciences in 2001 and is a Fellow of the American Physical Society.

Verghese is the senior associate chair for the theory and practice of medicine at Stanford and the author of two well-known books.

Verghese's first book, "My Own Country: A Doctor's Story," a memoir about treating AIDS patients in rural Tennessee, was a finalist for the National Book Critics Circle Award in 1994 and named by Time magazine as one of the five best books of the year. His second book, "The Tennis Partner," a compelling story of drug addiction and friendship, was a New York Times notable book and a national bestseller.

In receiving honorary degrees from NIU, both Rosner and Verghese join distinguished company. Past recipients of honorary doctoral degrees from NIU have included former U.S. Speaker of the House J. Dennis Hastert, distinguished historian Arthur Schlesinger, former Argonne Director Hermann Gruber, U.S. Sen. Paul Simon, poet Gwendolyn Brooks and astronomer Carl Sagan. ■

Classified Ads

MISCELLANEOUS

TABLE – Queen Anne cherry wood cocktail table. \$25. Jim Regis. (630) 964-5382.

RIMS AND TIRES – 20" custom chrome rims & tires. Good condition. \$800. o.b.o. Kevin Fuller. (708) 333-4441.

SNOWMOBILE – 2006 SKIDOO MXZ 1000 Snowmobile – (602 miles) Very clean, excellent condition. No time to use it anymore. Asking \$8,000 or best offer. Sue Weber. (708) 403-2579.

MINI REFRIGERATOR – Mini Refrigerator/Freezer 34" high x 19" deep x 18-1/2" wide, used, in excellent condition. Holds 72 12 oz. cans. \$90 obo. Tom Buffington. (630) 346-2966.

PRINTER – Epson CX5400 multifunction printer/scanner/copier, perfect working condition, rarely used, like new. \$25. Jay Johnson. (630) 378-1248.

TABLE – 60" wooden round table with folding legs. \$50. Wayne Michalek. (815) 372-2285.

STUFFED ANIMALS – Large 7 Stuffed Animals (2 ft tall) of 7 Dwarfs. New \$32 price tag still on each animal, which totals \$224. Colorful and very nice. \$75. Sandra Tollaksen. (630) 661-0906.

OVEN – Whirlpool gas oven with stove top, bisque color. \$125 delivered, \$100 if you pick up. Jeff Ullian. 815-953-9607.

FURNITURE – 2 couches, refrigerator, dryer, kitchen table. Great for college students or first apt. or house, please call for pricing. Julie McGillen. (815) 715-8130.

MISCELLANEOUS – Health Walker, Cardio Glide, Ab Doer, eight bench and weights, Nordic Trac Pro, mini trampoline moon shoes – holds up to 200 lbs. \$30 each. Impact Sports soccer goal, 6' x 5' x 4', 2 Easton Premier Pro regulation street hockey goals – 6' x 4' x

26" – new. \$30 each. Electric stove, caloric, very good condition. \$70. Teresa Lang. (815) 634-2662.

TODDLER BED – Thomas the Tank Engine toddler bed with mattress. \$150. Karen Neumann. (630) 759-7879.

AUTOMOBILES

1996 OLDSMOBILE – Ciera SL Sedan 4D, 95K miles, 6V 3.1 Liter, White, Full power, Air condition, cruise control, front side air bags, excellent condition, never experienced any mechanical problem, KBB value (Excellent \$3,375), asking \$2,950 negotiable. Xue Li. (951) 603-4031.

2001 HONDA – Accord LX, 4 door, 48K miles, 5-speed manual, naples gold, garage kept, excellent condition, \$8,500, David Cookson. (630) 493-9407.

HOUSING

ROOM/RENT – Share a three-bedroom, two-bath condo. Carriage Way Drive, Burr Ridge, IL. \$550 per month. Enos Baker. (702) 501-0607.

ROOM/RENT – Country setting, 10 min. from lab. John Jurca. (630) 739-0972.

WANTED

FITNESS EQUIPMENT – Cardio fitness equipment in good working order for a small parochial high school. Roger Blomquist. (630) 983-4054.

TO BE GIVEN AWAY

TWO BED FRAMES – double bed frame, and twin bed frame with headboard and footboard. You must haul. Susan Rhodes. (630) 968-1362.

MAGAZINES – Fine woodworking magazines, 15 years of back issues, would hate to throw them out. Tad Jesionowski. (630) 960-2663.