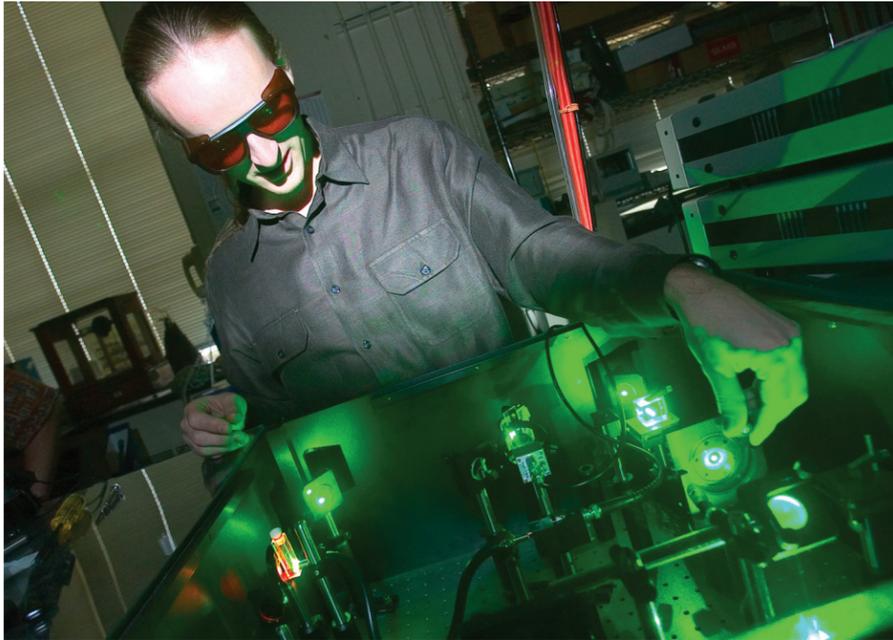


What makes quantum dots blink?



Matthew Pelton, of Argonne's Center for Nanoscale Materials, adjusts a green laser used to monitor the sporadic blinking of quantum dots. Photo by Jason Smith.

SYLVIA CARSON

IN ORDER to learn more about the origins of quantum dot blinking, researchers from Argonne, the University of Chicago and the California Institute of Technology have developed a method to characterize it on faster time scales than have previously been accessed.

Quantum dots are being intensively investigated for applications such as light-emitting diodes, solid-state lighting, lasers, and solar cells. They are also already being applied as fluorescent labels for biological imaging, providing several advantages over the molecular dyes typically used, including a wider range of emitted colors and much greater stability.

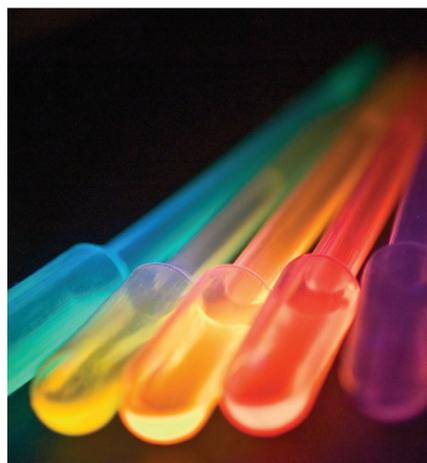
Nanocrystals of semiconductor material, also known as quantum dots, have great promise as light-emitting materials, because the wavelength, or color, of light that the quantum dots give off can be very widely tuned simply by changing the size of the nanoparticles. If a single dot is observed under a microscope, it can be seen to randomly switch between bright and dark states. This flickering, or blinking, behavior has been widely studied, and it has been found that a single dot can blink off for times that can vary between microseconds and several minutes. The causes of the blinking, though, remain the subject of intense study.

The methods developed by Matt Pelton of Argonne's Center for Nanoscale Materials and his team of collaborators has revealed a previously unobserved change in the blinking behavior on time scales less than a few microseconds. This observation is consistent with the predictions of a model for quantum-dot

blinking previously developed by Nobel Laureate Rudolph Marcus, contributor to this research, and his co-workers. In this model, the blinking is controlled by the random fluctuation of energy levels in the quantum dot relative to the energies of trap states on the surface of the nanocrystal or in the nearby environment.

The results of this research provide new insight into the mechanism of quantum-dot blinking, and should help in the development of methods to control and suppress blinking. Detailed results of this work have been published in a paper in the *Proceedings of the National Academy of Sciences*. ■

www.pnas.org/cgi/doi/10.1073/pnas.0706164104



Individual quantum dots are too small to see with the naked eye, but they signal their presence by emitting light in a variety of colors. The quantum dots shown here suspended in fluid inside laboratory plasticware, emit different colors depending on their size. Photo by Jason Smith.

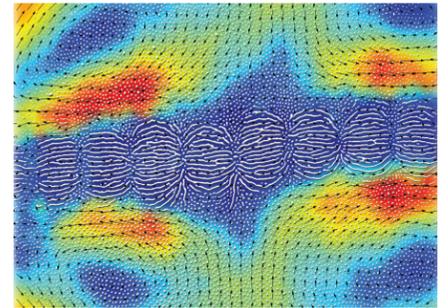
Researchers catch tail of magnetic 'snakes'

ARGONNE researchers have created "magnetic snakes" with unique dynamic and magnetic properties that could usher in new generations of recording media, conductors and microfluidic devices.

The undulating, snake-like patterns are created when magnetic micro-particles floating on water are exposed to an alternating magnetic field. These magnetic "snakes" are spontaneously created from short chains of magnetic micro-particles as a result of the competition between magnetic and hydrodynamic forces. Their internal structure and magnetic ordering can be effectively tailored by adjusting the external magnetic field. The birth and existence of the "snake" is driven by pattern-induced waves on the water surface, said Alexey Snezhko, who developed the process along with Igor Aronson, Maxim Belkin and Wai-Kwong Kwok (all MSD). Strong induced vortex flows on the surface of water complete the rich hydrodynamic picture of the self-assembled magnetic snake.

"The self-assembled materials that automatically arrange themselves into useful patterns in a controlled electric and magnetic field environment have tremendous potential as components in micro- and nano-scale devices," Snezhko said.

The magnetic self-assembly phenomena may be used to fabricate the next generation of magnetic recording



A self-assembled magnetic "snake" and associated velocity patterns. The snakes are spontaneously created from short chains of magnetic micro-particles as a result of the competition between magnetic and hydrodynamic forces.

media or transparent conductors based on self-assembled conducting networks of magnetic micro-particles. Magnetic snakes may also lead to new microfluidic devices for bioanalysis in which an alternating magnetic field can be used to assist transportation of micro-particles through micro-channels in biochips.

A paper on the research has been accepted for publication by *Physical Review Letters* (2007). The research was funded by the U.S. Department of Energy.

A movie of a magnetic snake is online. ■

www.anl.gov/Media_Center/Argonne_Today/media/2007/magneticsnake.mov

Achieving zero

ROBERT ROSNER, ARGONNE DIRECTOR



Rosner

THE RECENT series of injuries, accidents and non-compliances has served as a reminder to me of my deep and ongoing concern for the safety and well-being of members of the Argonne family. As we work together, we should never do so in a way that compromises the safety of ourselves and our community. I found it deeply unsettling that our review of the incidents found that most were avoidable — the result of improper planning or improper work performance. Let me ask each of you to pause, as I am doing now, to consider what we can do to make Argonne a safer place.

While we strive to open up new possibilities in science and engineering, we should also strive for zero: zero injuries, accidents and non-compliances. Achieving zero is not about luck. It will be the result of strong desire and proper planning and performance. It will happen when everyone who works at this lab fully implements and adheres to Integrated Safety Management

(ISM) principles in his or her daily efforts. Every employee, visitor and subcontractor working at Argonne has important and essential roles and responsibilities in work planning and performance of ISM processes.

ISM principles offer the most reliable and consistent way to plan and perform our work to achieve the goal of zero. It means proper planning: defining the work scope, identifying and analyzing the hazards, developing and implementing effective controls, working within those controls and selecting qualified persons to perform the work. It means proper performance: requiring the work plan to be communicated among all involved parties. Known hazards are discussed and control measures agreed upon. Then, the work must be performed within those controls. ISM doesn't end when the task is completed: that's the time to reflect and share what went right, what could have been done better and what went wrong. The lessons learned can be used to improve the efficiency and safety of future tasks.

So, how do we stay on track to meet the goal of zero? I am asking each supervisor to meet with his or her direct reports to review and discuss this (See "Zero" on page 2)

Zero

(Continued from page 1)

message and the information below, which summarizes everyone's roles and responsibilities in the ISM process. By understanding why ISM processes are valuable and necessary, by reviewing our roles and responsibilities and using the ISM process in earnest, we can achieve zero injuries, accidents and non-compliances.

ISM is not an abstract concept. It's a very real, very effective way to protect yourself, your co-workers, the laboratory, our neighbors and the environment. And if the goal of zero seems like "pie in the sky," take a look around your workplace at your friends and colleagues. Pick a number, any number: how many of them do you want to see injured in the coming year?

SENIOR MANAGEMENT

- **Communicate expectations:**
 - Establish roles, clarify responsibilities and grant authority to implement ESH policies and procedures
 - Talk about what you expect and the importance of complying with ESH/QA requirements
 - Show your personal commitment to using the ISM principles and functions to plan projects and programs
- **Act:**
 - Periodically discuss policy and procedure implementation with direct reports.
 - For each new program and project, review how the ISM process is to be used.
 - Ensure sufficient resources are available to implement required ESH/QA programs
 - Conduct assessments of ISM process implementation and effectiveness.

DIVISION DIRECTORS

- **Communicate expectations:**
 - Establish roles, clarify responsibilities and grant authority to implement division ESH/QA procedures that comply with Argonne policies and procedures.
 - Stress the importance of compliance with ESH/QA requirements.
 - Show your personal commitment to using the ISM processes.
- **Act:**
 - Periodically discuss policies and procedure implementation with direct reports.
 - For each new program and project, ensure the ISM processes are used and adequate resources are available.
 - Conduct assessments of ISM process implementation and effectiveness, as well as facility and laboratory

- conditions.
- Observe work activities; recognize good performance and quickly address unsafe acts, unsafe conditions and non-compliances.
- Report assessment results and track corrective actions to completion.

SUPERVISORS AND GROUP LEADERS

- **Communicate expectations:**
 - Know your roles and responsibilities in assuring compliance with Argonne and division procedures.
 - Explain to your employees your responsibilities, as well as your expectations related to their performance.
 - Stress the importance of compliance with ESH/QA requirements.
 - Show your personal commitment to using the ISM processes.
- **Act:**
 - Use ISM processes to plan and perform every work activity and task.
 - Ensure compliance with Argonne and division procedures.
 - Conduct pre-project and pre-task briefings with employees to review the scope, hazards and required control measures.
 - Conduct work area inspections and discuss with employees ISM process implementation, as well as facility and laboratory conditions, and observe work activities in real time.
 - Recognize good performance immediately.
 - Immediately address unsafe behaviors or acts, unsafe conditions, non-compliances and incidents, and report them to the division office for further evaluation quickly.
 - Ask your employees what could be done better to improve the performance and safety of the work at the end of each task or day.

EMPLOYEES

- **Communicate expectations:**
 - Know management's expectations and your responsibilities.
 - Recognize what work you are trained and qualified and authorized to perform.
 - Be personally committed to using the ISM process.
- **Act:**
 - Actively participate in pre-project and pre-task briefings by asking questions or suggesting improvements.
 - Before performing each task, ask yourself: Am I trained and qualified and authorized to perform this task? Can the task be done safely? If not, stop work immediately.
 - Perform the work as planned and within the required controls.
 - If the work does not proceed as planned or the scope changes, safely stop the work and contact your supervisor so the ISM processes can be used to plan and perform the new task.
 - Report to your supervisor any unsafe behaviors, acts, unsafe conditions, non-compliances and incidents quickly.
 - At the end of each task, discuss with your supervisor your ideas for improving the performance and safety of the task. ■

CHEMISTRY, CHEMICAL ENGINEERING DIVISIONS TO MERGE

The Chemistry and Chemical Engineering divisions will be merged into the new Chemical Sciences and Engineering Division effective Monday, Oct. 1.

This merger will strengthen the laboratory's core capabilities and allow for growth in key programmatic areas. Al Wagner has been appointed the interim division director. A search committee has been established to identify a permanent division director.

INSIDE ARGONNE OVERHAUL NEARLY COMPLETE

Inside Argonne, the employee intranet, is undergoing a complete overhaul. The revamped site will feature improved site structure and navigation and a new look and feel.

To make it easier to find information, a new search form will be featured. News and announcements will be updated several times a day, and employees will be able to submit classified ads through *Inside Argonne*.

Other new features will include a dynamic event calendar, feedback form and a "photo of the day."

The new *Inside Argonne* will debut around Oct. 1.

RADIATION BADGES DUE FOR EXCHANGE

The quarterly radiation badge exchange will occur this week. Employees should return their third-quarter radiation badges to their assigned racks or to the local badge distribution office by Friday, Sept. 28. 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.

10-DIGIT DIALING FOR AREA CODE 630 REQUIRED STARTING OCT. 7

Due to increased demand for telephone numbers, a new "overlay" area code — 331 — will become available for the same

geographic area as 630. This will require that all calls within the 630 area code that are currently dialed with seven digits to be dialed with 10 digits (1 + 630 + telephone number) starting Sunday, Oct. 7. For example, those who live nearby calling the lab's general number will need to dial 1-630-252-2000.

These calls will remain priced as local calls regardless of the number of digits dialed.

In addition to this dialing procedure change when making a call, all "preprogrammed automatic dialing" will need to be changed from seven-digit number to the new dialing pattern. Some examples of 630 numbers that need to be considered are:

- Fax machines
- Call forwarding numbers
- Speed numbers
- Dial-up data
- Automatic dialing for alarms.

Until Oct. 7, both seven- and 10-digit dialing in the 630 area will operate.

This dialing change is not new in the Chicago metro area; 10-digit local dialing occurred with the 847 north Chicago area code several years ago when an "overlay" code was added.

For additional information see the AT&T Web page.

www.att.com/gen/general?pid=1496

SECURITY LEVEL REMAINS AT SECON-3

The laboratory security level remains at SECON-3: Threat Medium. Vehicle searches, routine building and vehicle patrols performed by uniformed security officers contribute to the safety and security of the laboratory. All employees should be vigilant and report any activity that appears to be suspicious. Employees are the best source of information regarding what is normal or out of place in their work areas. Reporting unusual activities or objects in the work area is the first step to neutralizing a potential threat.

Initiating a 911 call is the most efficient way to report unusual activities or articles. The 911 system notifies all the appropriate emergency service groups on site and initiates response.

Questions regarding this topic can be addressed to Sylvia Rada (SCD) at ext. 2-5734.

Ar'Gang – August 2007

NEW ARRIVALS

A boy, Lukas, born May 25 to Petra and Jean Utke (MCS). A girl, Tallulah, born Aug. 2 to Angie and Dave Pointer (NE). A girl, Haley, born August 5 to Kim Cyrkiel (FMS) and Ruben Garcia. Proud grandparents are Beth (OCF/PUR) and Joe Bonczalski (FMS-BM).

Proud grandparents: granddaughter, Candace, and grandson, Donte, born July 25 to Susan Benson (EVS); granddaughter, Ashley, born Aug. 21 to George Muszynski (CIS-NTS).

WEDDINGS/ENGAGEMENTS

Congratulations to Susan Rura (NE) and Ed Carlo (CIS) on their July 7 wedding; Sandy Wesolowski (OCF/PUR) on her June 16 wedding to James Smith; Brittany Boyle (OCF/PRO) on her Aug. 4 wedding to Joe Andrews; Cheryl (EQO-IH) and Tim Nelson (CIS) on the engagement of their daughter Kristin.

GET WELL

Get well wishes to George Lawhorn, Tom Gutowski, and Eddie Wicklatz (all from FMS-BM).

WELCOME

C&PA welcomes Abigail Allred and Steve McGregor. FMS-BM welcomes Ed Schmitt. NOD welcomes Mike Jagger. OCF/PRO welcomes Ellyn VanDuyne.

TRANSFERS

Good luck to Nancy La Rue who transferred from OCF/PRO to OCF/PUR.

FAREWELL

Good luck to Catherine Foster (C&PA) and Markus Puder (EVS) who have left the laboratory.

CONDOLENCES

Our condolences to Robin Colglazier (EQO) on the death of his father; Joe Moore (NOD) on the death of his grandfather; Jeanne Riley (FMS-Safety) on the death of her mother.

CONTRIBUTORS

Thanks to this issue's contributors: Judy Beumer (MCS), Nan Cantwell (FMS-BM), Kathy Fitzgerald (NOD), Brea Grischkat (NE), Diana Grygiel (EQO), Melanie Johnson (FMS-Safety), Nancy La Rue (OCF), Lori Greenwood (EVS), and Denice DiGiacomo (CIS).

MORE NEWS AND LATE-BREAKING UPDATES:

[INSIDE ARGONNE
www.inside.anl.gov](http://www.inside.anl.gov)

NEED A RIDE TO THE UNIVERSITY OF CHICAGO? A FREE SHUTTLE BUS MAKES ROUND TRIPS EVERY WORK DAY. FOR MORE INFO, SEE www.anl.gov/Visiting/shuttle.html

In memoriam: Jean F. Hall, pioneering computer scientist

JEAN HALL died June 5 after a long struggle with breast and bone cancer.

From 1951-1959 Hall was a master programmer and ran Argonne's computer laboratory. There she worked with such groundbreaking computers as the ENIAC and the UNIVAC and was one of the designers and programmers of the digital "electronic brain" AVIDAC and GEORGE, named for her father. She also was a founding member of the Association for Computer Machinery with legendary scientist Alston Householder.

"My mom always spoke highly of her experience at Argonne," said her daughter Carolyn Hall, "and was very proud of her position and participation in the development of computer science."

Hall graduated with a degree in mathematics from Pomona College in 1947. Later that year she became one of the founding employees of RAND Corporation in Santa Monica where she specialized in computer programming and helped to launch the budding field



Jean Hall, one of the few women at the forefront of computer programming in the 1950s

of scientific computers. While there she worked with scientists Herman Kahn and Ernie Plesset.

In 1959 she transferred to Sperry Rand in Philadelphia, again a master programmer. In 1985, she was recognized as one of the trailblazing female computer programmers and was invited to speak about the history of computer science at a "Pioneer Day" National Computing Conference in Chicago.

She is survived by her husband Harry, son Brian, daughter Carolyn and sister Charlotte Lundgren. ■

Argonne Hispanic-Latino Club celebrates Hispanic Heritage Month

THE Argonne Hispanic-Latino Club will host a performance by Chicago's premier Mexican folk music group, Sones de Mexico, Thursday, Oct. 11, in celebration of National Hispanic Heritage Month. The ensemble will perform at noon in the Building 362 Auditorium.

Sones de Mexico is a unique ensemble of seasoned Mexican folk musicians and educators that hail from Chicago. The group formed in 1994 to keep the tradition of Mexican "son"—a large family of regional

music and dance styles—alive in its many regional forms, true to its roots and old master, and current and fresh at the same time. Refreshments will be served at this performance.

National Hispanic Heritage Month takes place from Sept. 15 through Oct. 15. The month highlights the culture and traditions of U.S. residents who trace their roots to Spain, Mexico and the Spanish-speaking nations of Central America, South America and the Caribbean. ■

Argonne to participate in traffic safety campaigns

STARTING TODAY, Argonne is taking part in two traffic safety campaigns aimed at improving roadway safety for pedestrians and drivers on site and on the roadways.

Sept. 24 - 28 Argonne is participating in the PAVE campaign: Pedestrian Awareness Vehicle Education. The campaign was developed to promote a safer Argonne site for pedestrians and drivers. The campaign focuses on the idea that mutual courtesy and awareness among drivers and pedestrians are the keys to preventing accidents.

The campaign reminds and encourage employees to use crosswalks and reminds drivers that they need to look for and stop for pedestrians.

"Vehicle-pedestrian crashes usually occur because drivers are only looking for cars, are distracted or are just not expecting a pedestrian," said Phil Rash, chairman of the laboratory's Traffic Safety Committee. "Safety is every pedestrian and driver's responsibility. Reminders offered during this campaign could save your life or a co-worker's life."

The Traffic Safety Committee is taking a pro-active role by examining many of the laboratory's pedestrian and traffic control components. Recent suggestions have resulted in upgrades and corrections to pedestrian and traffic control systems. Comments and suggestions are welcome



and should be sent directly to Phil Rash at prash@anl.gov.

Drive Safely Work Week will follow the PAVE campaign during the week of Oct. 1 - 5. Drive Safely Work Week is a workplace traffic safety campaign aimed at communicating the importance of driving safely both on and off the job to eliminate preventable crashes. This year's campaign theme is "Take charge of your driving behavior. Reduce your crash risk. Avoid high-risk driving mistakes."

The Drive Safely Work Week campaign will address five common high-risk driving mistakes and provide risk-avoidance tips that all employees can use to ensure their safety and the safety of others on the road. Greg Dely, senior industrial safety specialist, recalled losing a friend due to careless driving mistakes.

"A friend of mine, who was a construction worker, was struck and killed while doing repairs on the highway," Dely said. "It was a senseless death that could have easily been prevented had the driver slowed down and maintained focus on the road. The one thing all drivers can control is their driving." ■

ISM DAY SAFETY PRESENTATION MAKE-UP SESSIONS ARE ONLINE

Employees who were not able to attend ISM Day sessions July 19 are required to complete a make-up training session online by Friday, Sept. 28. The training is now available online at <https://www.wbt.anl.gov/CourseContent.asp?COURSENO=EQO116>. Employees without computer access may contact Tim Ortiz at ext. 2-8818 to schedule a time in the EQO-Training computer lab in Building 202.

CHORAL GROUP RESCHEDULES CONCERT

The Argonne Choral Group has rescheduled its fall concert for Thursday, Oct. 11, at 6 p.m. in the Building 362 Auditorium. The theme of the concert is "Americana." A variety of music will be performed including such pieces as "Shenandoah" and the Eagles "Seven Bridges Road."

A \$5 donation at the door is requested.

The club is now planning year-round performances and is always looking for more singers of any and all talent levels. Rehearsals are held Mondays and Thursdays from 11:45 a.m. to 12:30 p.m. in the Building 362 Auditorium. For more information, contact Pat Garner (NE) at ext. 2-4872 or Katie Weber (U of C) at ext. 2-8101.

ARGONNE JAZZ CLUB TO PRESENT FINAL CONCERT OF THE YEAR

The Argonne Jazz Club will host a gospel jazz concert Thursday, Sept. 27, from 5:30 - 6:30 p.m. in the Building 402 Auditorium.

A donation of \$5 is requested. Proceeds will benefit the Marrow Foundation.

Tickets will be available at the door beginning at 4:30 p.m.

A raffle will be held after the concert.

SINGERS NEEDED FOR VETERAN'S DAY OBSERVANCE

Singers are needed for the Veteran's Day Observance to be held Thursday, Nov. 8.

The National Anthem will be sung in addition to the military service songs. Rehearsals will be held Mondays and Thursdays beginning Oct. 22 from 11:45 a.m. to 12:30 p.m. in the Building 362 Auditorium. Singers of all skill levels are welcome to honor the nation's troops in song.

For more information, contact Pat Garner (NE) at ext. 2-4872.

DOE'S OFFICE OF SCIENCE LAUNCHES WEB SITE FOR U.S. ROLE AT LARGE HADRON COLLIDER

The U.S. Department of Energy's Office of Science launched a new Web site at <http://www.uslh.c.us> to tell the story of the U.S. role in the Large Hadron Collider (LHC), a particle accelerator that will begin operating in Europe, near Geneva, Switzerland, next year. Hundreds of physicists, engineers and students from the United States are joining with colleagues from around the globe in the largest and most complex scientific experiments ever built. The LHC experiments will address some of the most fundamental mysteries of the universe.

The new Web site aims to provide one-stop shopping for anyone seeking

information about the United States and the LHC. Updated daily, the Web site features up-to-the-minute news and information about the LHC, along with high-resolution images, scientists' blogs, resources for students and educators and contact information for news media.

ARGONNE EMPLOYEES RECEIVE DISCOUNT AT SIX FLAGS' FRIGHT FEST

Argonne employees can buy discounted tickets to Six Flags during its annual Fright Fest Saturday, Oct. 6 (10 a.m. - 10 p.m.), Sunday, Oct. 7 (10 a.m. - 9 p.m.) or Monday, Oct. 8 (10 a.m. - 6 p.m.). Tickets are \$25 per person (a \$31.64 savings) and are valid for one day only. Children 3 and under are free. Tickets are available at the Argonne Credit Union, by e-mailing argonneclub@anl.gov or by calling ext. 2-6143.

ARGONNE CLUB LOOKING FOR MEMBER OF BOARD OF DIRECTORS

The Argonne Club is seeking an out-going, enthusiastic, motivational individual to fill a vacancy on the board of directors. This person will need to attend and contribute to monthly meetings, the Argonne picnic, breakfast with Santa and occasional themed parties.

Anyone interested should contact Argonne Club President Todd Hayden at ext. 2-6143.

WEIGHT WATCHERS OPEN-HOUSE MEETING TO BE HELD

Weight watchers will hold an open-house meeting Wednesday, Oct. 3, at noon in Building 200, Room J183. The class runs for 12 weeks at a cost of \$144. A minimum of 15 enrollees are required.

FEMALE SMOKERS SOUGHT FOR OSTEOPOROSIS STUDY

Women who smoke cigarettes and are four years or more past menopause are needed for an osteoporosis research study. Volunteers should be generally healthy. Participants will receive up to \$350 compensation for blood draws, which can be carried out on-site. They will also get a free heel-bone scan for osteoporosis.

For more information, contact principal investigator Maryka H. Bhattacharyya (BIO) at ext. 2-3923 or research associate Andrea Ebert-McNeill (BIO) at ext. 2-3869.

FREE FLU VACCINES TO BE OFFERED TO EMPLOYEES

Regular employees of Argonne, DOE, and the University of Chicago are eligible to receive a free flu shot from the Medical Department on the following days:

- **Tuesday, Oct. 9:**
 - 8:30 - 11:30 a.m., ages 57 and over
 - 1 - 4 p.m., Ages 45-56
- **Wednesday, Oct. 10:**
 - 8:30 - 11:30 a.m., ages 44 and under
 - 1 - 4 p.m., all ages
- **Friday, Oct. 12:**
 - 1 - 4 p.m., all ages

Flu shots will be given out only on the days and times announced, without exception.



SOFTBALL CHAMPS / The Predators won the Argonne Softball League tournament this year and took home the Dick Cash Memorial Trophy with a 13-2 record in season play. The season came down to the final week with the Predators beating out the Marauders 5-4 in the final game to win the trophy. The teams split their other two games this season, each winning one game by a score of 8-7. The Predators topped the Screwballs 16-4 in the tournament game. Standing, from left to right are Mark Wesolowski, Dean Carbaugh, Dave Bielick, Bob Sommer, Bob Utesch, Bob Winarski, Glenn Cherry, Lloyd Hoster, Ron Kmak and Mike Bracken. Kneeling, from left to right, are Jack Burke, Bruce Hoster, Greg Hoster and Tim Connelly. Not shown: Dan Burke and Glen Moonier.

Reporting inventions helps preserve rights

BETWEEN April 1, 2006, and March 31, 2007, 134 Argonne employees reported new inventions to the U.S. Department of Energy.

Reporting inventions to the DOE is an important obligation of each Argonne employee. Both DOE and the laboratory review each reported invention to determine if it should be patented to protect their interests. Patenting an invention can be an essential tool for creating new industries and jobs, fulfilling Argonne's technology transfer mission, returning licensing royalties to the lab for additional research and commercializing Argonne-developed technology. DOE also patents laboratory inventions to protect its research

investment in government-funded technology and to license laboratory-developed technologies for commercial development, which improves U.S. competitiveness.

Although a U.S. patent can be filed within one year of the first public disclosure of an invention, foreign patent rights are lost unless a patent application is filed before public disclosure. Thus, reporting an invention before publication preserves valuable foreign patent rights that can be essential to the commercialization of the technology in foreign countries.

It is the laboratory's policy that 25 percent of any licensing royalties are shared by the inventors of the licensed patent and 50 percent of the licensing

royalties are shared by the inventors' divisions to fund additional research, benefits that can only be realized if an invention is first reported to the laboratory.

Argonne inventions can be reported online at www.anl.gov/invent. ■

Congratulations, and thanks, go to all the enterprising Argonne inventors who reported new Laboratory inventions from October 2006 through March 2007.

Daniel Abraham, Bernhard Adams, Rajesh Ahluwalia, Oyelayo Ajayi, Randy Alkire, Khalil Amine, John Anderson, Michelle Arora, Klaus Attenkofer, Orlando Auciello, Gyorgy Babnigg, Allen Bakel, Uthamalingam Balachandran, Theodore Bauer, Bipin Bihari, Munidhar Biruduganti, Delbert Bowers, Branislav Brajuskovic, John Carter, Gang Chen, Ling Chen, Zonghai Chen, Michael Chen, Hual-Te Chien, Hee Chung, Jeffery Collins, Raymond Conley, Jacqueline Copple, Terry Cruse, Edward Daniels, Patrick De Lurgio, Chris Deemer, Patric Den Hartog, Stephen Dorris, Jeffrey Elam, William Ellingson, Robert Erck, Ali Erdemir, Osman Eryilmaz, John Falkenberg, George Fenske, Paul Fenter, Rex Gerald II, Carol Giometti, Gayarathi Gopalakrishnan, Dieter Gruen, Artem Guelis, Sreenath Gupta, Deborah Hanson, Ahmed Hassanein, Andrew Hebden, Thanh Hua, Brian Ingram, Bassam Jody, Christopher Johnson, Jacqueline Johnson, Sun-Ho Kang, Hyon Chol Kang, Ali Khounsary, Robert Klingler, Isak Konkashbaev, Theodore Krause, John Krebs, Sundar Krishnan, Michael Krumpelt, Philip Laible, James Laidler, Tae Lee, Ralph Leonard, John Wellen, YuPo Lin, Chian Liu, Anthony Lubinsky, Gordon Lurie, Beihai Ma, Albert Macrander, Victor Maroni, Christopher Marshall, Alex Martinson, Jorg Maser, Jennifer Mawdsley, Carol Mertz, William Miller, Michael Molitsky, Ramkumar Natarajan, Maria Negri, Suhas Niyogi, John Noonan, Luis Nunez, Leonidas Ocola, Peter Ostroumov, Sang-Ho Park, Jong-Hee Park, Michael Pellin, Candido Pereira, Joseph Pomykala, Jr., Kevin Quigley, Apostolos Raptis, Jerome Rathke, Claude Reed, Monica Regalbutto, Jules Routbort, Daniel Schabacker, Oliver Schmidt, Ramanujam Sekar, Suvankar Sengupta, Shuh-Haw Sheen, Dileep Singh, Seth Snyder, Sun-Ju Song, Jeffrey Spangenberg, Edward St. Martin, John Steckenrider, Gregory Stephenson, Jiangang Sun, Michael Thackeray, Krishna Uprety, George Vandegrift, III, Alexandre Vaniachine, John Vaughey, Arun Wagh, Dean Walters, Xiaohua Wang, Xiaoping Wang, Qingzheng Wang, Jin Wang, Ulrich Welp, Roald Wigeland, John Woodford, Zhiyue Xu, Junbing Yang, Gennadiy Yershov, Bilge Yildiz, and Michael Zach.

Classified Ads

MISCELLANEOUS

MISCELLANEOUS – Office desk, 60 x 30 in. \$50. Office chair. \$15. Baby crib, 50 x 30 in. \$30. Toddler bed, 55 x 30 in. \$15. High chair, tricycle, stroller. \$5 each. Zheng-Tian Lu. (630) 548-4707.

MISCELLANEOUS – Child's Little Tykes Workshop, tool box, tools. \$45. Fran Perri. (815) 439-1671.

MISCELLANEOUS – Two-wheel dolly with pneumatic tires. \$20. Office desk with chair. \$25. Roslyn Kiwior. (708) 843-1210.

MISCELLANEOUS – Umax Astra 3400 scanner. \$10. Kingston PC2100 256MB SDRAM-DDR. \$10. Dell laptop 15" bag. \$10. Epson on-line store \$20 gift card. \$10. 2.5" hard drive enclosure (aluminum; ATA/IDE to USB 2.0). \$8. Xiaofeng Wang. (630) 335-5049.

MISCELLANEOUS – Royal vinyl storage building. \$200. Sharp microwave. \$20. Raleigh road bicycle, high frame, used couple times. \$20. Metal bed frame. \$15. Jerzy Osipiuk. (630) 670-6365.

MISCELLANEOUS – Guitar amplifier, Crate GTX212, on-board DSP, 2 x 12" speakers, 120 Watt, new \$500. \$220. Refrigerator, dorm size, 1.7 cu. ft., 18"x18"x18". \$75. Truck bed mat for Ranger, 1/4" rubber, new \$70. \$40. Gary Drake (630) 406-9078.

FURNITURE – Benchcraft couch (100") and loveseat (74") - off-white fabric with patches of blue, green, peach - southwest colors, good condition. \$245 for both OBO. Marvin Lien. (630) 848-1357.

DARKROOM EQUIPMENT - Complete darkroom setup, for black & white film and paper, includes Omega B8 enlarger, timers, trays, film tanks, etc. \$120. Andy Jansen. (630) 739-7721.

FURNITURE – Entertainment center, oak wood, bevel glass. \$175. Couch/hideaway bed and matching chair. \$175. Jim Oprzedek. (773) 586-0044.

KITCHEN APPLIANCES - Gas Stove Top color Bisque (off white) standard size 30". \$150 o.b.o. Gas cabinet mount 24" oven with broiling drawer color Bisque Excellent condition, both only 4 years old. \$500 o.b.o. Harold Gaines (773) 239-3666.

TV - Color Television for sale. 41 inch, Mitsubishi, console TV (with doors to cover the screen) in good condition. \$400. Raj Sekar. (630) 922-7370.

FURNITURE - Whole house of furniture. Piano, TVs, kitchen set. Xiang Sun. (630) 621-6919.

AUTOMOBILES

1999 JEEP – Grand Cherokee Limited V8 AWD, fully loaded, dark green, charcoal leather, Infinity premium stereo, 10 disc, 115kmi. \$7600. Shane Flood (708) 207-8537.

1998 JEEP – Grand Cherokee, 5.8 I V8, black, 120k highway miles, new tires, leather interior, heated seats, quality sound system, 4WD, well maintained and clean. \$4750. Dick Konecny. (630) 964-3660.

2002 CHEVROLET – Cavalier, 88K miles. \$4500. June Saragossa. (815) 722-1664.

HOUSING

HOUSE/SALE – Unincorporated Plainfield, 3br, 2bth, tri-level on _ acre, mature trees, furnished/unfurnished, all appliances and lawn tractor. \$237,000. Stephen Jones. (815) 254-2190.

DUPLEX/SALE – Duplex On Golf Course! 2 Bedrooms, Loft, 2.5 Baths, Oak Upgrades Throughout, Custom Deck. Move-in Ready, Quick Close Available. (Lakewood Falls - 2 Miles S. of I55 off of Weber Rd). Linda Shoudis. (630) 992-3381.

CONDO/SALE – 1 BDRM, 2 Bath, garage and reserved parking, fireplace, all appliances, 1K credit at closing, vaulted ceiling, on a lake in Tinley Park, \$159,500. Jim Podraza. (708) 212-5250.

CONDO/SALE –Up-scale large corner unit, 4 floor elevator. View Riverwalk to Riverside dam from balcony and bedrooms. Two miles from I-55. Thomas J. Kovarik. (708) 447-8664.

WANTED

FURNITURE – Cheap couch, recliner, table and chair in useable condition for a college student. Patrick McCormack. (847) 975-3191.

LOST AND FOUND

EYE GLASSES – Found Sept. 5 in Building 214, Room B234, Seville Row, brown frames. Elizabeth Hartig. Lab ext. 2-6375.

This Argonne advertisement appeared in R&D magazine's R&D 100 Awards issue. Dubbed by the Chicago Tribune the "Oscars of Invention," the R&D 100 Awards each year recognize the top 100 new scientific and technological innovations developed throughout the world. Argonne researchers earned three of the magazine's 2007 awards. While the ad is part of the laboratory's efforts to recruit top-notch scientific talent, it also congratulates all of this year's award winners. More information on the winning Argonne technologies and their developers is available online. www.anl.gov/Media_Center/News/2007/news070807.html