NEWSLINE

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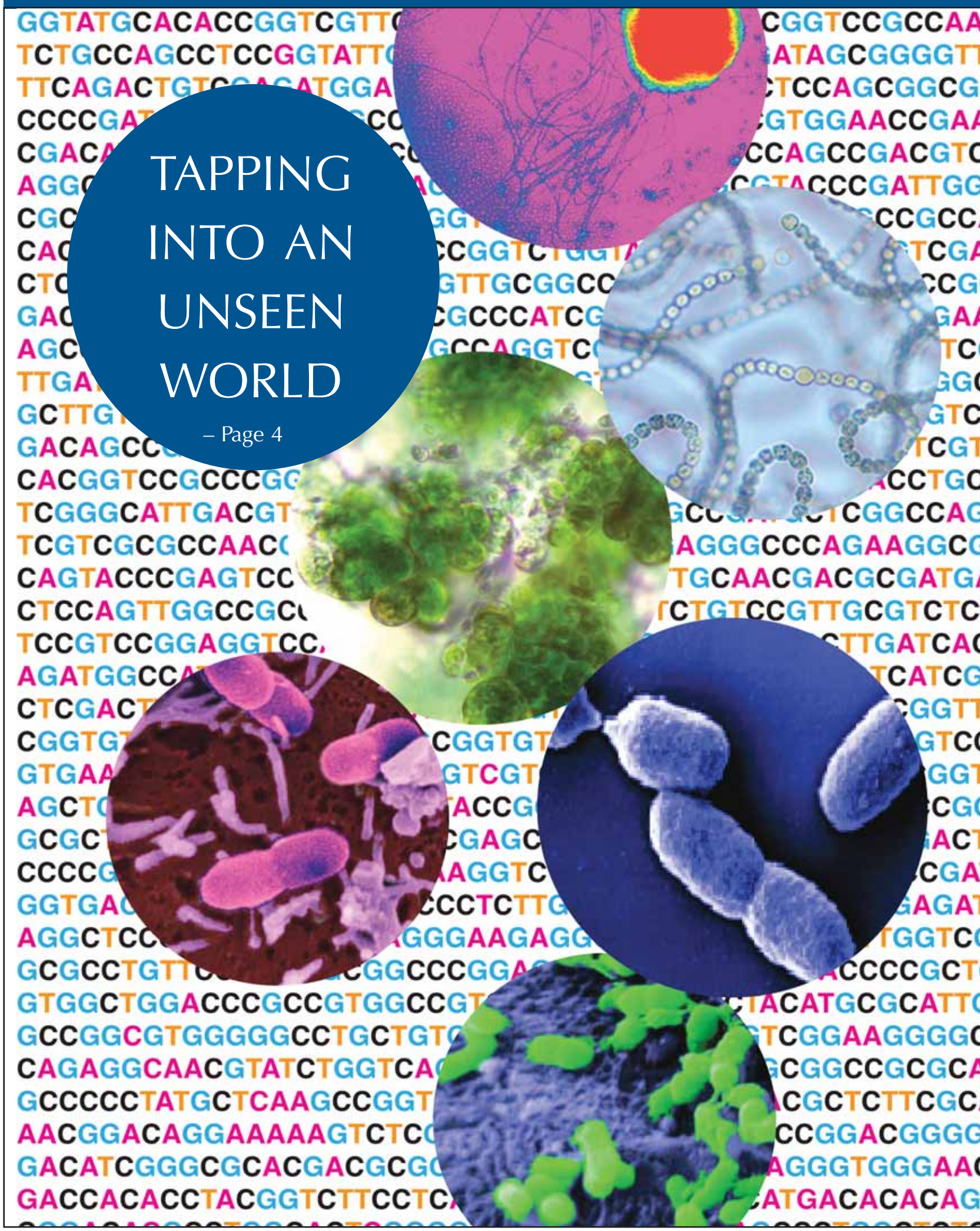

TAPPING INTO AN UNSEEN WORLD

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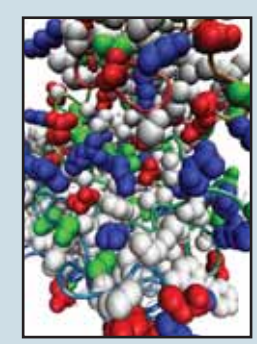


LAB ANNOUNCEMENTS

The late Carl Haussmann is honored in Lab ceremony

By Lynda Seaver
Newsline staff writer

With his friends and family gathered around, the late physicist Carl Haussmann was honored June 2 when the Laboratory dedicated the drainage retention basin in his name.

Lake Haussmann, which sits between the National Ignition Facility, Central Café and Terascale Simulation Facility, was dedicated in a special ceremony hosted by Director George Miller. Attendees included Haussmann's daughters, Mary Boeck and Barbara Wilson, and his grandchildren.

"This is a fitting memorial to all that Carl was," Miller told the guests, who assembled at a special monument located at the center of the lake shore, just north between buildings 453 and 551W. Also in attendance were guest speakers Mike May, former Lab director; John Birely, the associate vice president for Lab Programs at the UC Office of the President; John Emmett, former associate director of Lasers, and Lowell Wood, senior scientist at the Lab.

Though Haussmann died in 1998, Miller said his ideals and his legacy remain very much alive. Miller credited Haussmann as an advocate for national security, supercomputing and the Lab's laser programs. As Miller and other speakers attested, it was Haussmann who helped champion the Lab as a leader in supercomputing and lasers, among other programs.

"He was one of the Lab's founding kindred," said Lowell Wood, "too young to be a founding father next to (E.O.) Lawrence and (Edward) Teller, but right there with (former directors) Johnny Foster, Mike May and John Nuckolls."

Haussmann came to the Lab in 1953 as an Army captain, and according to Mike May, immediately showed leadership qualities. He helped lead the Lab's development of the submarine-launched ballistic missile system and then turned his attention to computing and laser physics.

"He used common sense 24 hours a day," May recalled. "His leadership and optimism never deserted him."

Emmett recalled how Haussmann, then associate director of Lasers, kept trying to recruit him to the Lab.

When Haussmann was promoted to the Director's Office (he served as associate director at large) Emmett was named his replacement. "I miss Carl every day," Emmett said. "Working with him was the best thing. Becoming AD was a step down."

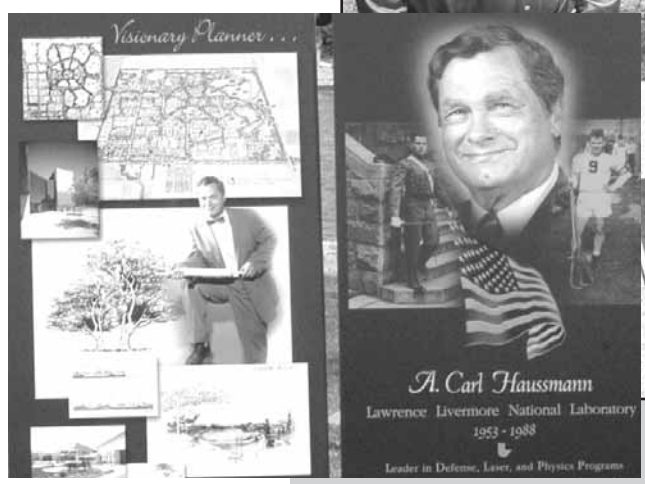
While Haussmann held many titles throughout his tenure, he also is considered the Lab's "patriarch at large." It was Haussmann who spearheaded the transformation of the Laboratory to its current campus-like feel. In the late 1960s, Haussmann led the Laboratory in designing a standardized site plan, called the Royston Plan, which continues to provide the concepts and framework necessary to accommodate the Laboratory's needs. Included in this plan was the planting of approximately 10,000 trees, earning Haussmann the moniker "father of the trees."

"To attract the best and the brightest to this Laboratory, Carl felt the Laboratory needed to look more like a campus" than its earlier military-styled facility, Miller said.

"He truly was a renaissance man," Miller added. "His love of the Lab, the environment of the Lab and the people at the Lab were truly infectious, and we are all benefactors of that."

Lake Haussmann began as an aquatic ecosystem and has evolved into an attractive lunchtime gathering spot. The area features a parcourse, rose garden and self-guided nature tour, and is a popular home for Canada geese and the federally protected red-legged frog.

Employees are invited to walk the paths, take the self-guided tour and learn more about the lake, as well as Haussmann.



LYNDA SEAVER/NEWSLINE

Top: George Miller and Carl Haussmann's daughters, Mary Boeck and Barbara Wilson, unveiled a plaque in Haussmann's memory at a special Lake Haussmann dedication ceremony last week. Inset: A display at the ceremony detailed Haussmann's life.

Get involved at ES&H Fair

Hybrid cars, the proper handling and disposal of household wastes, and wildlife awareness and related safety concerns are among the many displays planned for the environmental sector of the ES&H Fair on Thursday, June 22. The fair will be in full swing from 11 a.m.-1:30 p.m. in the triage area near the Health Services Bldg. 663. In addition to environment, other major sectors of the fair will cover safety and health.

As many as 20 environmental exhibits from outside and inside the Lab are expected.

The fair theme this year is "Get engaged! Get personally involved in your environment, safety and health."

Sandia's Mim John announces she will retire in September

Mim John, vice president and head of Sandia California, announced Thursday that she will retire in September. In an e-mail message to Sandia employees, John said Aug. 31 would be her last day at work.

"My emotions are at both ends of the spectrum – on the one hand I'm ready for change – but more importantly, you all deserve someone with new ideas to lead you into the next decade of the Division's future," she said. "On the other hand, of course, you've been my professional family, my home, my supporters, my friends in one way or another for almost 28 years now."

John said she plans to spend time with her husband Bill, "reconnect with family and friends, and to simply get things in order at home." She said she was also making the announcement to allow Sandia to begin the process of selecting a replacement.

Labs Director Tom Hunter said John's contributions to the nuclear weapons program, her role in supporting DoD and her leadership in the Department of Homeland Security community will be sorely missed.

SCIENCE NEWS

New research shows men's biological clock is ticking, too

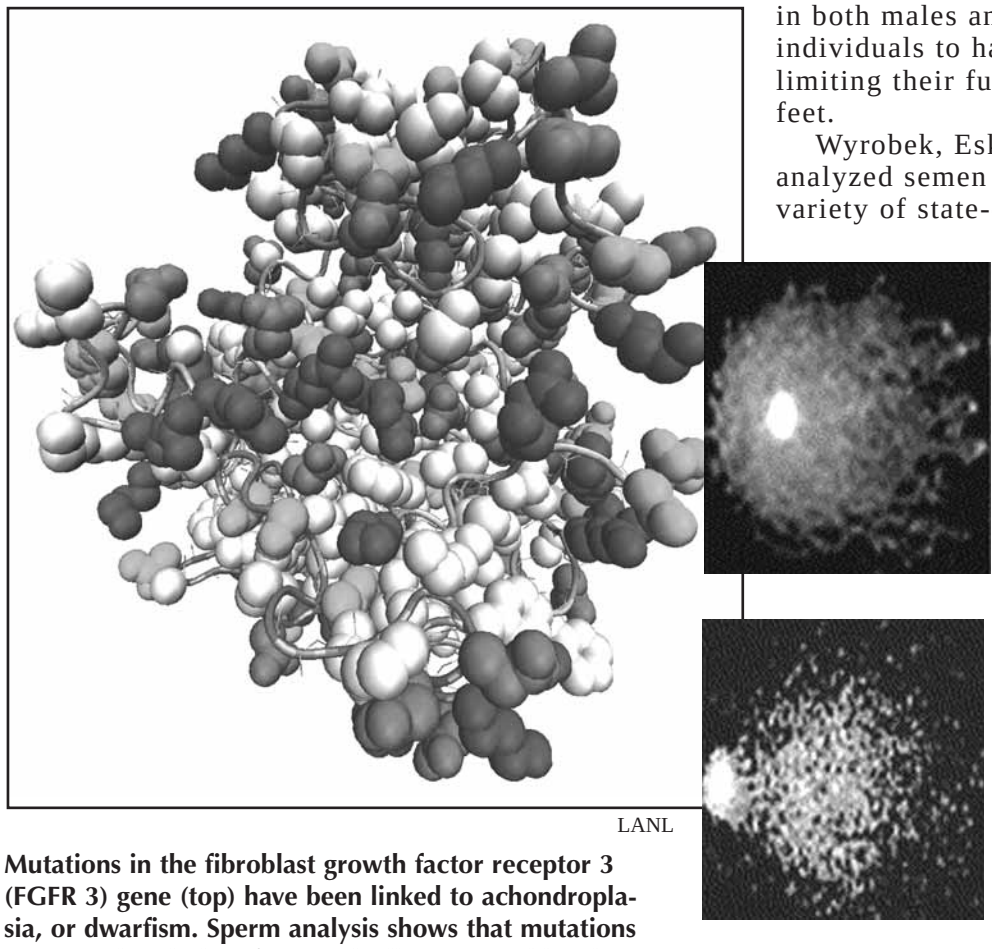
By Charlie Osolin
Newsline staff writer

Men, like women, have a biological clock — it just ticks at a different pace.

New research at the Laboratory and UC Berkeley, indicates that the genetic quality of sperm gradually worsens as men get older, increasing a man's risk of being infertile, fathering unsuccessful pregnancies and passing along dwarfism and possibly other genetic diseases to his children.

The study found a steady increase in sperm DNA fragmentation with increasing age of the study participants — a group of LLNL employees and retirees — along with increases in a gene mutation that causes achondroplasia, or dwarfism. The first changes were observed in men in their early reproductive years and continued into old age.

Earlier research by the same team indicated that male reproductive ability gradually worsens with age, as sperm counts decline and the sperm lose motility and their ability to swim in a straight line. In the current study, the researchers analyzed DNA damage, chromosomal abnormalities and gene mutations in semen samples from the same subjects — 97 healthy, non-smoking men between 22 and 80 years old — and found that sperm motility showed a high correlation with DNA fragmentation, a condition which is associated with increased risk of infertility and a reduced probability of fathering a successful pregnancy.



LANL

Mutations in the fibroblast growth factor receptor 3 (FGFR 3) gene (top) have been linked to achondroplasia, or dwarfism. Sperm analysis shows that mutations associated with dwarfism gradually increased by about 2 percent for every year of age. Insets: Top. Normal sperm. Bottom: Abnormal sperm. Sperm DNA fragmentation is associated with increased risk of infertility.

The study appeared this week in the online edition of the *Proceedings of the National Academy of Sciences*.

"This study shows that men who wait until they're older to have children are not only risking difficulties conceiving, they could also be increasing the risk of having children with genetic problems," said co-lead author Andrew Wyrobek of LLNL's Biosciences Directorate.

"We know that women have a biological time clock," said co-lead author Brenda Eskenazi of UC Berkeley's School of Public Health, "with an increase in risk of miscarriage and producing children with trisomy (an extra chromosome, such as in Down's syndrome) as women age, and with a seemingly abrupt end of fertility around perimenopause. Our research suggests that men, too, have a biological time clock — only it is different. Men seem to have a gradual rather than an abrupt change in fertility and in the potential ability to produce viable healthy offspring."

Unlike in women, the researchers found no correlation between male aging and chromosome changes that cause Down's syndrome and other forms of trisomies — such as Klinefelter syndrome, Turner syndrome, triple X syndrome, and XYY in offspring — that are associated with varying types and severity of infertility as well as physical and neurological abnormalities. They did conclude, however, that some older men could be at risk for fathering children with dwarfism, and that "a small fraction of men are at increased risks for transmitting multiple genetic and chromosomal defects."

In the case of Apert syndrome, a serious disfiguring birth defect, the researchers found that the effects of advancing male age may differ among different groups of men. Apert syndrome gene mutations increased in the sperm of a second group of men recruited in the Baltimore inner city by researchers at Johns Hopkins Medical Center, while no age effects were observed in the group of men recruited in California.

Wyrobek noted that these differences in findings suggest that factors other than age may be involved, raising the possibility that socioeconomic or dietary factors or ethnic background also may be involved in how age affects the quality of human sperm.

"Since some forms of genomic damage change with age and others don't," he said, "overall genomic sperm quality cannot be measured by any single sperm test."

Dwarfism, a genetic disorder that affects bone growth, is the most common growth-related birth defect, occurring in about one in every 25,000 births. It occurs in all races and in both males and females and causes affected individuals to have very short arms and legs, limiting their full adult height to about four feet.

Wyrobek, Eskenazi and their colleagues analyzed semen from the volunteers using a variety of state-of-the art methods for detecting genetic and chromosomal defects in human sperm. A flow cytometer method was used to detect DNA fragmentation and chromatin defects in collaboration with co-author Don Evenson at South Dakota State University. Gene mutations in the achrondroplasia gene and in the Apert sydrome gene were measured using highly sensitive polymerase chain reaction-based methods developed by co-authors Ethylin Jabs at Johns Hopkins and Norman Arnheim at USC in Los Angeles. The team also used a Livermore-developed chromosome analysis system called sperm FISH (fluorescence in-situ hybridization). They found a strong correlation between age and sperm DNA fragmentation, with genetic mutations associated with dwarfism gradually increasing by about 2 percent for every year of age.

The study included at least 15 men from each age decade from 20 to 60 years, and 25 men 60 to 80 years old. The researchers gathered extensive medical, lifestyle and occupational exposure history from the men and excluded current cigarette smokers and men with current fertility or reproductive problems, a previous semen analysis with zero sperm count, vasectomy, history of prostate cancer or undescended testicle, or exposure to chemotherapy or radiation treatment for cancer.

Understanding the effects of paternal age has become more important as increasing numbers of men are having children at older ages. Since 1980, there has been about a 40 percent increase in 35- to 49-year-old men fathering children, and a 20 percent decrease in fathers under 30. Studies also have shown that it takes longer for older men to conceive, even when the age of the mother is considered.

Other authors of the study are Francesca Pearson from LLNL, Suzanne Young from UC Berkeley's School of Public Health, Irene Tiemann-Boege from UCLA, and Rivka Glaser from Massachusetts College of Liberal Arts.

The study was primarily funded by several grants from the National Institute of Environmental Health Sciences, part of the National Institutes of Health, and the U.S. Environmental Protection Agency.

SCIENCE NEWS

DOE's JGI finishes 100th microbial genome sequence

By David Gilbert
Newsline staff writer

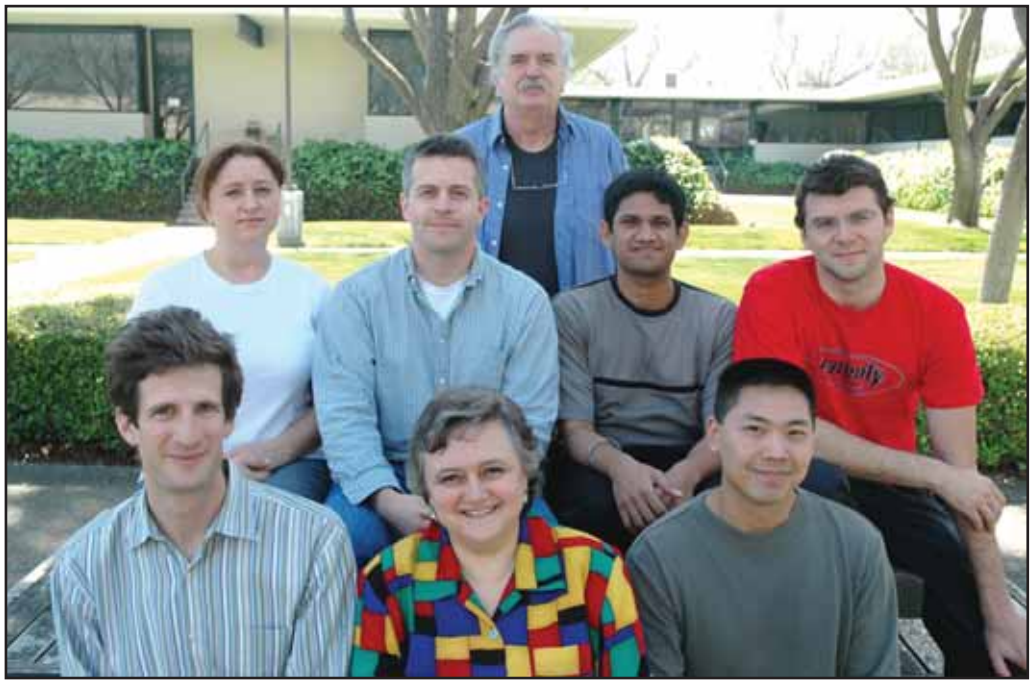
Mighty microbes, thriving in even the world's most extreme environments, are capable of performing myriad biological functions, learned over billions of years. Those lessons, and how they can be captured to render clean renewable sources of energy and to repair damaged environments, are among the secrets encoded in their DNA sequence.

On May 23, at the largest gathering of microbiologists in the world, the 106th general meeting of the American Society for Microbiology (ASM) in Orlando, Fla., ASM President Stanley Maloy, announced that the scientific community has embarked on the third golden age of microbiology, one that requires a blend of the old and new approaches — DNA sequencing among the latter.

Maloy highlighted the most recent milestone achieved by the Department of Energy Joint Genome Institute (DOE JGI), its finishing 100 microbial genomes — a diverse portfolio of the vast and mostly uncharacterized microscopic world.

"DNA sequencing has opened a particularly productive vein in expanding the frontier of microbiology," he said. "Especially where, through conventional culture methods, we are unable to shed light on the metabolic profiles of these microorganisms and their environmental implications, DNA sequencing provides us a welcome set of tools."

JGI has sequenced more than 380 organisms, more than any other institution in the world. As microbes range in size from typically five to tens of millions of letters of code, several microbes could be sequenced in one day at JGI's Production Genomics Facility. However, the sequencing process is an iterative one, requiring six- to eight-times coverage of each genome. The term "finished," refers to the rigorous standard of accuracy established for the Human Genome Project of tolerating no more than one mistake in 50,000 letters of genetic code with no gaps.



DAVID GILBERT/PAO

Pictured here is the finishing team from the DOE Joint Genome Institute Production Genomics Facility (PGF), led by Alla Lapidus (center) and includes (clockwise) Ben Horowitz (software developer), Michele Martinez (lab support), Alex Copeland (quality assurance production group leader), Steve Lowry (finisher), Vasanth Singan (finisher), Eugene Goltsman (finisher) and Stephan Trong (software developer). Not pictured, Pat Kale, who manages the software developers and Paul Richardson, DOE JGI Microbial Genome Program Director, who oversees a larger group that includes the PGF finishers, in addition to finishing groups at LLNL (led by Patrick Chain) and LANL.

Patrick Chain, who oversees a microbial genomics group matrixed to JGI from LLNL's Biosciences Directorate, also participated in the ASM meeting.

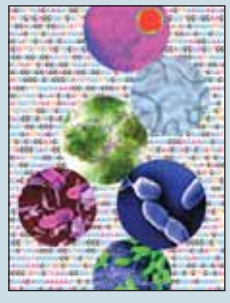
"DNA sequence has truly revolutionized environmental microbiology," Chain said. "Despite providing a simple snapshot in time, DNA sequence and particularly finished genomes, provide us with the repertoire of genes utilized by the organisms to perform all of its activities, including those of interest to LLNL and DOE. We are only beginning to understand the relationship between sequence and function, so much work remains."

The 100th microbial genome is a methane-producing organism, *Methanosarcina barkeri fusaro*.

The DOE JGI 100 list can be found at: http://genome.jgi-psf.org/microbial.

ON THE COVER: DNA SEQUENCE INFORMATION SUMMARIZED IN COLORFUL AS, TS, GS AND CS, FLOW OUT OF (TOP TO BOTTOM) GEOBACTER SULFURREDUCENS, NOSTOC PUNCTIFORME (2), BURKHOLDERIA CENOCEPACIA HI2424, AZOTOBACTER VINELANDII, AND BURKHOLDERIA CENOCEPACIA AU1054, A RICH SAMPLING FROM THE DIVERSE ARRAY OF 100 MICROBES FINISHED BY JGI.

ARTWORK BY FLAVIO ROBLES.



New telephone directories to be sent only to those who sign up

Telecom On-Demand

In an ongoing effort to minimize costs, the 2006/2007 LLNL telephone directory will only be sent to those requesting a copy by way of adding themselves to the mailing list through an "opt-in" process.

If you wish to receive a printed directory you must go to the ICS Website by Monday, June 12, log in using your OUN and PAC, and follow the opt-in instructions. If you do not opt-in, you will not be mailed a telephone directory.

The opt-in Website is for the Telephone Directory mailing only; it does not affect employee listings in the telephone directory.

The printed 2006/2007 LLNL telephone directories are scheduled for distribution to Laboratory employees in August. Note that if you plan to leave the Laboratory before the printed directories are distributed in August, copies will not be forwarded and you should not opt-in to the mailing list.

Facility Point of Contacts (FPOC) and building contacts will be notified when telephone directories are available for general areas. This opt-in process applies only to individual telephone directory requests. Based on previous distributions, supplies will be available to FPOCs and building contacts. No advance requests are to be placed at this time. As in the past, building contacts will be notified when directories are available for general areas.

For questions, contact ICS's directory services and administrative support, 2-9592.

SCIENCE NEWS

Laboratory joins extreme materials collaboration

By Anne M. Stark
Newsline staff writer

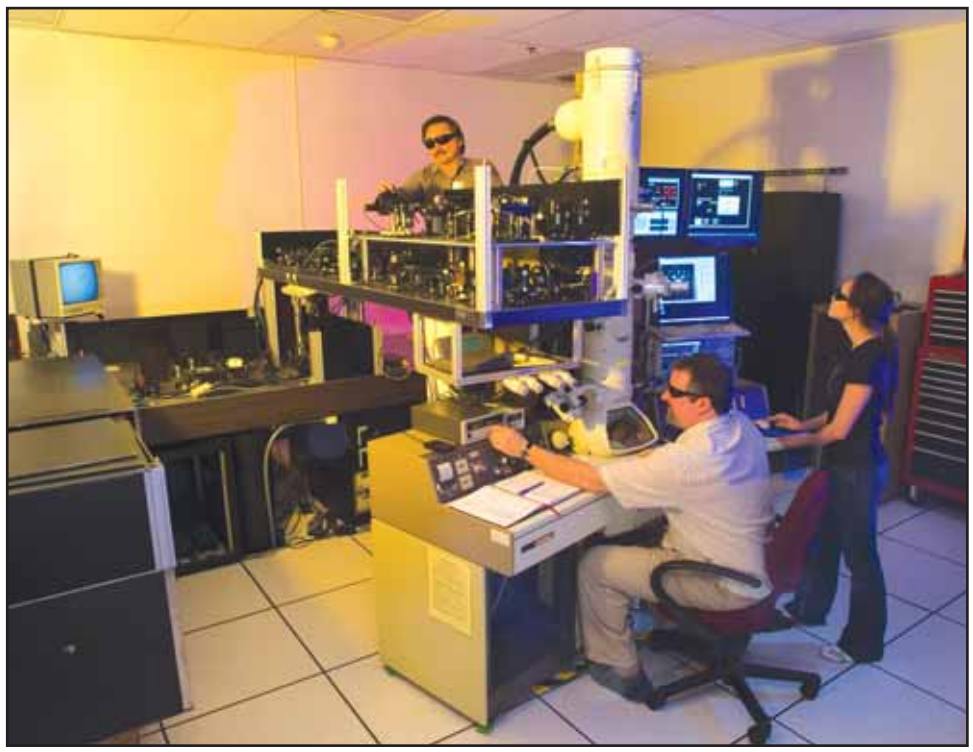
Scientists soon will have the ability to look at materials on a sub-picosecond time scale and dive into an understanding of how and why they change.

The Institute for Material Dynamics at Extreme Conditions (IMDEC), the newest UC Multi-campus Research Program, will bring UC and national laboratory scientists together to delve into research on fundamental issues in the ultrafast dynamics of materials at extreme conditions.

"It's a way to study complex phenomena that are transient in nature," said Wayne King, Materials Science and Technology division leader and Livermore's IMDEC leader.

King said the collaboration would involve research that could take material, look into its crystalline structure and see how it behaves under extreme conditions such as shock waves, high pressure and heat.

"We live in a dynamic world, and we need to increase our understanding of kinetics, phase transitions, and more broadly, the evolution of materials into which energy has been deposited," said IMDEC director Roger Falcone, who also is a UC Berkeley professor. "Such research requires new experimental tools, including ultrafast X-ray and electron probes, and complex modeling at the atomic level. IMDEC will serve as an umbrella organization, bringing together researchers from UC labs and campuses, and other regional partners, and encouraging collaborative activities that take advantage of important local facilities and the skills of local researchers."



MARCIA JOHNSON/TID

Clockwise, Curtis Brown, Judy Kim and Thomas LaGrange conduct research on the Dynamic Transmission Electron Microscope (DTEM).

The idea to establish an institute dedicated to materials at extreme conditions started in summer 2005 with a UC Office of the President forum on High Energy Density Science and Ultrafast Science.

The institute evolved with a focus on research in:

- High-energy density science using an X-ray free-electron laser
- Material dynamics using Dynamic Transmission Electron Microscope (DTEM)
- Material dynamics in complex, nanoscale systems using optical spectroscopy
- High-energy density science using high-energy lasers
- Ultra fast dynamics in complex systems using and X-ray Synchrotron beam line

While the institute is based at UC Berkeley for the first five years, the Laboratory plays a large role. The two major proposals are to build a laser and target chamber for the SLAC Linac Coherent Light Source, which is scheduled to be complete in 2009, and to build a next generation Dynamic Transmission Electron Microscope (DTEM).

The Laboratory already houses the DTEM in Bldg. 298. But the next generation model will be able to image materials at picosecond time resolution and nanometer special resolution.

That means that time-resolved experiments can be done in *situ* in the microscope, King said.

Extreme conditions range from pressures associated with dense planetary environments, to high-temperature plasmas, to materials like liquids and molecular systems in excited states undergoing structural reorganization.

"The challenge is to be able to model and observe both the rapid dynamics that such material undergoes, and the inherently transitory conditions that exist at such high-energy density," Falcone said. "The time-scales involved typically range from femtoseconds to microseconds."

IMDEC scientists also would have access to the suite of high-energy lasers in the Lab's Jupiter Facility. They range from ultra fast, high-power pulse lasers, to a soft X-ray laser to long-pulse, high-energy multi-kiloJoule lasers.

Researchers could also use the Lawrence Berkeley National Lab's Advance Light Source synchrotron's newest beam line that was built to study ultra fast dynamics in gas, liquid and solid samples.

"The national labs provide an infrastructure capable of building and operating major facilities, and the researchers at the labs, together with faculty and students at the campuses, comprise a diverse scientific work force capable of recognizing and solving today's most significant scientific problems," Falcone said. "It's also a good way for university students to get exposed to the work of scientists at the national labs."

King said the institute's location is ideal.

"UC is perfectly situated in the nation for ultrafast science," he said. "The geography is just perfect because we have the LCLS and a whole suite of lasers and electron-based methods in our backyard and we want to apply these instruments to materials at extreme conditions."

Comment period for LLNL Request for Proposal comes to a close

The comment period for the draft Request for Proposal (RFP) for the competitive selection of a management and operating contractor for the Laboratory closed Monday, June 5.

The final RFP will be issued after comments are considered. The draft RFP provides that proposals will be due to National Nuclear Security Administration 60 days after the final RFP is issued. Proposals will be reviewed by NNSA's Source Evaluation Board, comprised of NNSA technical and business experts, who will provide a report of findings to the NNSA Source Selection Official. The current LLNL Management & Operations contract expires on Sept. 30, 2007. NNSA intends to select a contractor in the winter of 2006/07 and begin full contract performance on Oct. 1, 2007.

The draft RFP is publicly available at the NNSA Service Center's LLNL Management & Operations Contract Competition Website at http://www.doeal.gov/llnlCompetition/. Responses to questions and other information about the draft RFP also will be posted to this site.

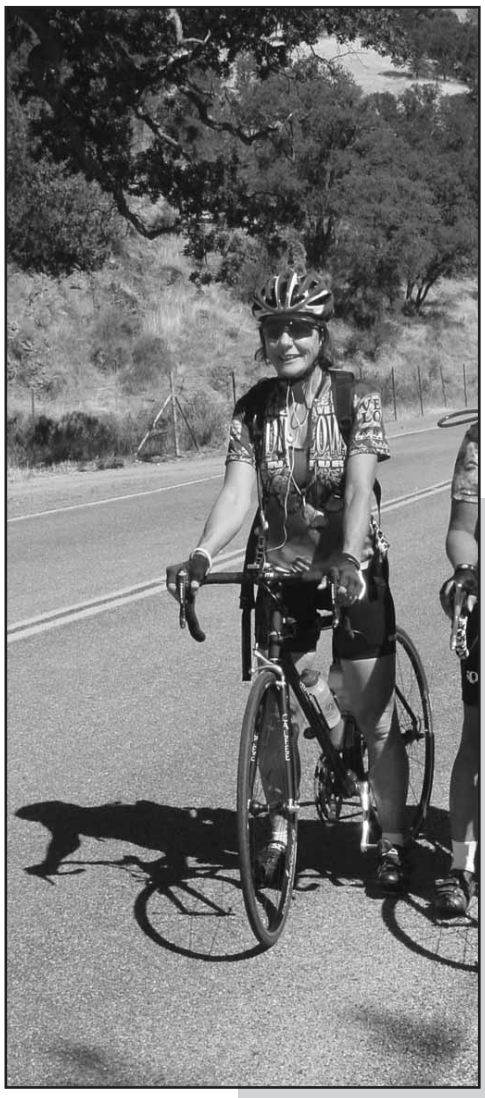
In addition, the Laboratory's special Website updates employees on transition-related issues. The site is located on the Web at http://transition.llnl.gov/home/and is posted to the Lab portal page at https://portal.llnl.gov/portal/page/portal/MYLLNL/FRONT_PAGE.

Bicycle safety month

For veteran Laboratory cyclists road safety is no accident

To most of us they're just colleagues or co-workers. But because June is "Bicycle Safety Month," the Traffic Safety Committee is spotlighting a trio of two-wheel super-heroes, each of whom occupies a unique niche in the Lab's cycling community.

Veteran cyclists Rose O'Brien, Chuck Parrish and Eileen Vergino share their enthusiasm, some practical advice about cycling and offer safety tips. Check *NewsOnline* for additional information about Bicycle Safety Month.



Name: Rose O'Brien

Age: 61

Lab Position: Senior administrator, DNT/B Division

Years at Lab: 40

Years of bicycle riding: 30

Unique bicycling niche: Transcontinental ride for Tri-Valley Hope Hospice.

Wear helmet while cycling? Always. This is the single most important safety precaution.

How long have you worn a cycling helmet? In 29 years, I only failed to wear a helmet during my first year. Then I suffered a bicycle accident on Stanley Boulevard and received a concussion. From that day on, I always wore head protection.

Safety tips for other riders: Two general suggestions: First, stay constantly aware of your surroundings. Scan ahead where you are going and where everyone else is going. Mount a rear-view mirror on your handlebars and use it. Make eye contact with all automobile drivers you encounter — especially if you cross their paths. Second, invest in quality equipment. Your bike should fit you. Wear a good-quality helmet. And use cycling gloves to protect your hands should you fall. Have your bike tuned up yearly.

Worst mistake a rider can make: Not wearing a helmet and not drinking enough water.

Name: Chuck Parrish

Age: 53

Lab position: computer programmer

Years at Lab: 31

Years of bicycle riding: 47 riding; 30 years commuting

Unique bicycling niche: Does not drive a car. Bikes everywhere, including daily commute — rain or shine. Bikes during lunch hour. Treks included Los Angeles to Boston, New Zealand, Australia, Taiwan, Italy, England and Ireland, as well as Victoria, Canada to Tijuana, Mexico. Made several trips from Lab to SFO on a folding bike with suitcases. At the airports, the bike folds, slips into a suitcase and goes on the airplane.

Wear helmet while cycling? Yes

How long have you worn a helmet? Since 1987.

Your approach to bicycle safety: Despite cycling 10,000–15,000 miles a year, I've had only one serious fall. I suffered a broken shoulder from slipping on a frozen bridge. I maintain a reasonable speed and don't ride too fast for condition. I'm more tortoise than hare, content to see the world at 15 mph.

Safety tips for other riders: Don't hurry: Bicycling is not racing. Time spent getting there is part of the process. If you want a strength or aerobic challenge, seek out hills or ride into a strong head wind, but don't speed. Be aware of surroundings. Never cover your ears with headphones, and always wear a helmet.

Worst mistake a rider can make: Group riding that takes up the whole road, which angers motorists, and disregarding stop signs and red lights.

Name: Eileen Vergino

Age: 51

Lab position: deputy director, Center for Global Security Research

Years at Lab: 29

Years of bicycle riding: 9 years tandem, 29 years on a single

Unique bicycling niche: Stoker (rear rider) on a tandem with husband Michael.

Wear helmet while cycling? Always.

How long have you worn a cycling helmet? All 29 years

Approach to tandem safety: Working together is key. The captain steers, but the stoker is the engine on the bike, and gets it up hills. Never close your eyes on the back of a tandem; be alert for hazards. Both of us have overheated, so the stoker now makes sure that the captain drinks. Riding a tandem can test any relationship. If my husband goes too fast downhill, I yell — or sometimes a well placed kidney shot works.

Safety tips for other riders: Make sure tires are correctly inflated and all parts work properly. Check funny noises right away. Have the bike serviced regularly. Safe bike handling requires practice. Ride with a group. If you're unsafe, they'll explain what to do differently. Take their words to heart. Riding my single with the Lab's noontime group made me a stronger and a safer tandem rider.

Worst mistake a rider can make: Don't forget to carry plenty of water and either gel or goo. Be sure to drink and eat enough.

Retirees' corner

Sue (Procurement, 1989) and **Sam** (Electronics Engineering, 1993) **Spataro** are in charge of the committee for Sommerfest at "The Barn" in Livermore on Saturday, June 27, 5-10:30 p.m. The Karl Lebherz's German "Oomp-pah" Band will play and there will be a dance exhibition by the Nature Friends Schuhplattler Bavarian Band. Other retirees working on the committee are **Jim and Barb Doggett, Doug Baird, Arne Kirkwoog,** and **Herb Newkirk.** Advanced tickets: Way Up Gallery, Carnegie History Building, or contact the Spataro's via e-mail at: psyrah@comcasst.net.

Art (Beam Research, 1990) and Betty **Henry** have moved from Fallbrook, Calif., in northern San Diego County to the Park Lane retirement home in Monterey. Art served on the Fallbrook Planning Commission for six years and as president of the Friends of the Fallbrook Library for two years. Betty was president of the Fallbrook Garden Club for three terms and the AAUW chapter for two terms. They have done 28 Elderhostel programs and have two more scheduled in New Hampshire and Virginia in October.

Garith (Mechanical Engineering, 2002) and **Amy** (Laboratory Services, 2002) **Helm** celebrated their 13th wedding anniversary on Maui in March. From their balcony they saw whales breaching in the channel waters between Molokai and Lanai. In April, they spent a week in Santa Fe, attending a conference on science and consciousness. Many retired Lab friends visit them in their resort community near Palm Springs. In July, they'll be taking a break from the desert heat on a 16-day Mediterranean cruise from Istanbul to Venice.

The ever-popular retirees picnic is June 21 at Ravenswood Historical Park in Livermore. The park opens at 11 a.m. and lunch is at noon. Note that advance payment and reservations must be received by Friday, June 16. Use the form on the retirees Website, http://www.llnlretirees.org/home.html Print the form, fill it out and mail it to the Retirees Association with advance payment ($20 for each attendee). If you don't have a printer, find another retiree to print it out for you or phone Association Chair **Jeff Garberson,** 443-4297, to have a form mailed to you.

The Travel Group meeting is Tuesday, June 27, at 2 p.m. in the community room of the Livermore police building, 1110 S. Livermore Ave. Susan and Brian Mayall will present "Driving Through New Zealand."

Send input to **Jane or Gus Olson.** E-Mail: AugustO@aol.com or JaneRubert@aol.com. Phone: (925) 443-4349, snail mail address: 493 Joyce St.,

Newsline

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Media & Communications manager: Lynda Seaver, 3-3103

Newsline editor: Don Johnston, 3-4902

Contributing writers: Bob Hirschfeld, 2-2379; Linda Lucchetti, 2-5815; Charles Osolin, 2-8367; David Schwoegler, 2-6900; Anne M. Stark, 2-9799; Stephen Wampler, 3-3107.

For an extended list of Lab beats and contacts, see http://www.llnl.gov/pao/contact/

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People news

in memoriam

Guia Bisaro

Guia Bisaro, an administrative assistant in the Laser Science Engineering Division, died June 29 at Valley Care Hospital in Pleasanton, of complications following an asthma attack. She was 43.

Bisaro joined the Lab in August 2004, and worked closely with employees from Engineering who were matrixed to the NIF Programs Directorate. Friends described her as "patient, with a heart of gold." They said, "She had a warm personality that touched everyone who met her."

She is survived by her husband Leigh. The couple had recently moved to Livermore from Tracy.

A memorial service will be held June 24 at Forest Lawn Memorial Park in Long Beach.

Coworkers are invited to send sympathy cards or notes, available at the LSED Division Office in Bldg. 490, room 1440. Donations may be made in her name to the American Lung Association.

Jean Madden

Jean Madden died on May 20 at the Brun's Hospice House in Alamo. She was 64.

Born in St. Paul, Minn., on Dec.16, 1932, she moved to San Francisco in 1955. She lived in Pleasanton for 40 years. She moved to a retirement community in Walnut Creek last spring.

Madden was employed by the First National Bank and Harper and Row.

She was a writer for *Newsline* and worked at the Laboratory until she retired in 1993.

She is survived by her two sons, Joe of Santa Cruz and Dan of Morrisonville, N.Y. Services were held in Walnut Creek.

Joyce Lynn Middleton

Joyce Middleton, a former Lab employee, died May 18 in Tracy. She was 67.

Middleton was born Feb. 3, 1940, in Detroit and lived in Tracy for the last 45 years. She was vice president of the West Side Pioneers, a member of the Delville Folk Dancers in Livermore and was the founder of the Northern California Carnival Glass Club.

She is survived by her husband, David L. Middleton of Tracy; and cousins, Sandra Pike of Bakersfield, Nancy Waln of Courts Hill and Delma Fern Harless and Wayne Steinhauser of Independence, Mo.

Contributions in her name may be sent to First Presbyterian Church or the West Side Pioneers, P.O. Box 117, Tracy, CA 95378.

David Jerome West

David West, a former Lab employee, died May 24 in Mercy Medical Center in Redding, Calif. He was 77.

He was a resident of Redding and a prior resident of Livermore. He was a U.S. Army veteran of the Korean Conflict, a member of the First United Methodist Church in Redding, and a member of the Lake Redding Golf Course and Sun Oaks Racket Club, both in Redding.

He is survived by his wife, Peggy West of Redding; sons, David West Jr. of Redding and Andrew West of Paskenta, Calif.; daughter, Laura West Baker of Issaquah, Wash.; five grandchildren and two great-grandchildren.

Services were held in Redding.

Memorial Service

A memorial service for former Lab employee Donald Frederick Towse will be held at 10 a.m. Saturday, June 17, at the Administration Building at Reid-Hillview Airport in San Jose. Towse died April 16. For more information go to the Web at ttp://www.towse.com/dontowse or see his obituary in the April 28 edition of *Newsline*.

Protecting arroyos vital to healthy area watershed

LLNL's wild side

By Lisa Paterson

A watershed is an area of land in which all water drains to the same location. LLNL's Livermore site is within the Alameda Creek watershed; two creeks cross the Livermore site (Arroyo Las Positas and Arroyo Seco) that are part of the network of waterways that form this watershed.

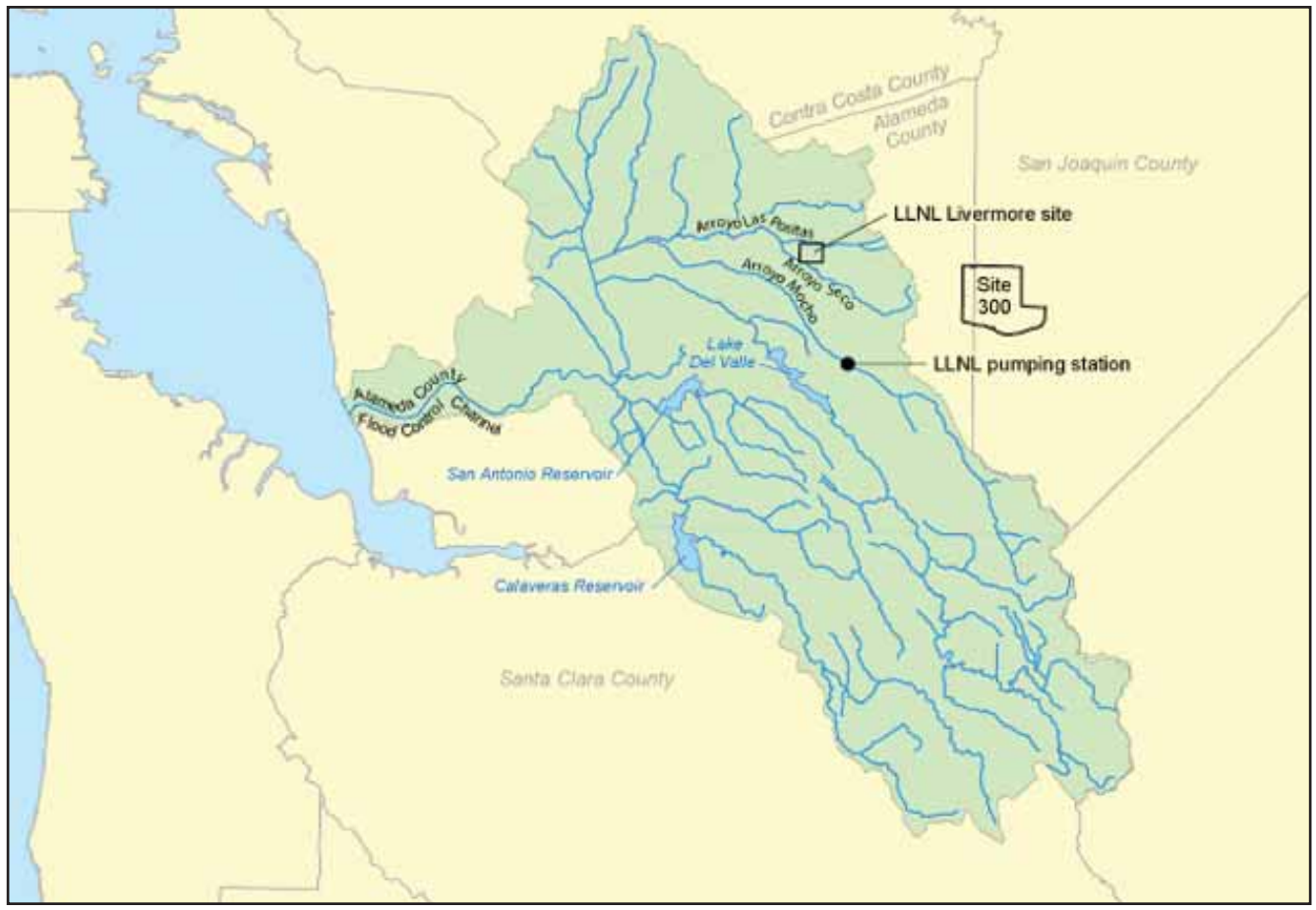
The Laboratory also pumps drinking water from the Hetch Hetchy aqueduct close to where the aqueduct crosses Arroyo Mocho, another tributary to the Alameda Creek watershed.

The Alameda Creek watershed includes an area of approximately 700 square miles in Alameda, Santa Clara and Contra Costa counties. Water in creeks and other drainages within this watershed accumulates and flow toward Alameda Creek and the Alameda County Flood Control Channel and eventually into the South San Francisco Bay near the Dumbarton Bridge.

The Alameda Creek watershed once supported populations of anadromous fish including steelhead *(Oncorhynchus mykiss)* and pacific lamprey *(Lampetra tridentata)*. Anadromous fish spend the majority of their life cycle in the ocean and return to fresh water streams and rivers to reproduce. Steelhead historically spawned in Alameda Creek and its tributaries, and the young fish returned to the ocean via the San Francisco Bay after approximately one year in the fresh water streams. But by the 1950s, the California Department of Fish and Game considered the steelhead fishery no longer viable.

The largest barriers to fish migration in the lower Alameda Creek watershed include three inflatable dams and a concrete drop structure (known as the BART weir) located in the Alameda Creek Flood Control Channel near the San Francisco Bay. The most significant barriers to fish migration in the watershed's upstream reaches are the three dams constructed to create Calaveras, San Antonio and Del Valle reservoirs. Also, numerous smaller fish migration barriers exist throughout the watershed. A study completed by the Alameda Creek Fisheries Restoration Workgroup in 2000 concluded that sufficient steelhead rearing and migration habitat remains in the watershed to support a population of these fish if the migration barriers were removed.

Efforts have been under way by government agencies and citizens groups for more than 20 years to restore anadromous fish to the Alameda Creek watershed. The efforts of these groups are finally coming to fruition. In 2001, the East Bay Regional Park District removed two small swim dams from Alameda Creek in the Sunol Regional Wilderness Park. Recently, the Alameda County Water District was awarded two $500,000 grants from the National Fish and Wildlife Foundation to remove the lower inflatable rubber dam in the Alameda Creek Flood Control Channel and to install fish screens on water supply diversion points at the mouth of Niles Canyon. The Zone 7 Water Agency has included structures to assist fish passage in recent projects within Arroyo Las Positas and Arroyo Mocho.



The Alameda Creek Watershed, in relation to the Laboratory site and its pumping station.

LLNL also has done its share to restore and protect the Alameda Creek watershed. In 2004, LLNL removed a concrete low water crossing that had been used to access LLNL's Hetch Hetchy pumping station from Arroyo Mocho. The removal of the barrier will allow steelhead access to approximately eight miles of habitat in the upper reaches of Arroyo Mocho after other downstream barriers are removed. In 2005, LLNL completed a project to reduce erosion in the LLNL reach of Arroyo Seco by adding meanders to the channel, reducing the slope of the creek banks and revegetating the site with native plants. This project was designed to reduce the sediment input to the watershed from this site and improve wildlife habitat. LLNL also implements a storm water pollution prevention program to protect the quality of runoff discharged into Arroyo Seco and Arroyo Las Positas and has undertaken projects to protect and improve habitat and water quality in these two arroyos.

There are simple measures we can take in our daily lives to protect the water quality and habitat value of our watershed. At work, implement the Lab's storm water pollution prevention program and dispose of wastes properly. At home, join in local volunteer efforts to clean up and restore native plants to the creeks in your home town, make sure you dispose of chemicals such as oil, paint and solvents at appropriate facilities, use native and other drought tolerant plants in your yard, and visit your local creeks and learn more about these precious resources. In Livermore, there is easy access to local arroyos. The Arroyo Mocho trail can be accessed from Robertson Park near Arroyo Road and the trail along Arroyo Valle is found in Sycamore Grove Regional Park off of Wetmore Road.

More information on the Alameda Creek watershed is available at http://www.alamedacreek.org/, and information on watersheds throughout the county can be found at http://cfpub.epa.gov/surf/locate/index.cfm.

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