Reflections

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Inside this issue ...

Cover by Ed Vigil

editor's journal

Eschewing the fat

Like millions of other Americans, I'm dieting ... again. This time I'm trying the low-carb, high-protein diet.

Diet fads, like clothing, seem to come in and out of style yearly. Perusing the bestseller list, I came across these titles: "Eating Well for Optimum Health," "Eat Right for Your Type," "Dr. Atkin's New Diet Revolution," "The Pilates Body" and the "Glucose Revolution."

There is an equal variety, if not greater, of articles on the subject of dieting. "Anti-Dieting Crusade Sponsors Own Day to Promote Health," "Life on the High-Fat Bandwagon," "The Fatty Nut Finds Its Place at the Table" and "Dieting Dangerously" are just a few of the recent articles listed on the New York Times Web site.

Every October, I'm reminded that middle age has crept into my life and those pounds seem harder and harder to lose as I get older.

Every October, the Lab begins its fiscal year. The connection, if you're curious, is a question posed on the Enhancing Experimental Science Taskforce Web site comment section: Is the Lab too fat? Researchers are not asking about the Lab workers' metabolic rates or the average employees' total body fat. They're concerned that the price of doing business at the Lab is too high.

The comments range from the cost of space tax to the price of oversight.

The chatroom-like forum not only gives researchers a place to express their feelings, it gives them a venue to offer suggestions on how they would "trim the fat."

For example, one suggestion offered is to modify contracting procedures. Another suggestion is to improve and modernize financial databases and tools. Another writer suggests that the Lab benchmark with other institutions or federal or government laboratories.

There are many diverse financial diets that the Lab could take. Some are more simple than others to try or implement. The Business Administration and Outreach Directorate is studying which diet or combination of new dietary habits make the most sense for the Lab.

Essentially there are two thrusts to control costs. One is a general thrust such as the price of travel, supplies and equipment. The second thrust is to address the administrative burden. There are initiatives currently underway to streamline and make more efficient the time and effort system and the hiring process. BAO welcomes comments. Address them to *AdministrativeBurden@lanl.gov.*

With future Lab budgets resembling a weight-watchers' banquet than an all-you-can-eat buffet, it's a good time to look settle on a financial diet. Hopefully, it will work better than any of my personal diets have.

Kathy

Reflections

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Safety First

All days are "Safety Days"

‘TRU Blue’ helps make waste fit

by Ternel Martinez

What do you do when legacy transuranic waste doesn’t neatly fit inside a 55-gallon drum for disposal? Simple, you make it fit — with a little help from “TRU Blue.”

That’s the name given to a 400-ton, large metal crusher situated at Area G, the Facility and Waste Operations (FWO) Division’s main waste management area. The “TRU” obviously stands for transuranic, while the “Blue” simply denotes the compactor’s color.

TRU Blue is a customized version of a commercial system that’s used at auto junkyards worldwide to crush old cars. It’s designed to crush contaminated waste metal into a much more manageable form that will fit inside 55-gallon drums for eventual shipment to the Waste Isolation Pilot Plant in Carlsbad.

The $500,000 compactor is part of the Decontamination and Volume Reduction System, a seven-year project sponsored by the Department of Energy’s Office of Science and Technology and Waste Operations program offices. The goal is to eliminate oversized, metal legacy waste items generated over the past 20 years. Such wastes include gloveboxes, piping, HEPA filters and small metal tanks.

“Currently, these metal wastes are packed inside hundreds of fiber-glass-reinforced plywood boxes, and they’re all too big to be transported to another facility. One of our largest crates is 40 feet long by 10 feet wide by 10 feet high,” said John Loughead of Solid Waste Operations (FWO-SWO).

“Some of the boxes were efficiently packed and are pretty full, while others have lots of empty space. But they’re only temporary storage containers. Some of the boxes also contain low-level radioactive and mixed waste, which must be carefully separated out,” he added. A few hundred of the boxes are currently stored inside above-ground temporary domes; the rest remain in earth berms about 30 to 40 feet high.

In all, DVRS will characterize, separate, decontaminate, consolidate and repackage 2,500 to 5,000 cubic meters of waste. The low-level radioactive waste will remain onsite at Area G, while the mixed and transuranic waste will be sent offsite, said Loughead.

The backside of TRU Blue has two windows so Lab employees can see the inner workings of the machine as it cuts and crushes the metal waste. Insert: John Loughead of Solid Waste Operations (FWO-SWO) holds a mock-up of what the metal waste will look like in the end: a home plate-shaped puck weighing about 80 pounds. *Photos by LeRoy N. Sanchez*

Before opening each box, DVRS crews first will conduct physical assessments and use neutron counters, X-ray machines, gamma spectrometers and other instruments and technologies to accurately evaluate the waste inside and confirm its contents. “These steps are critical. We need to know many things, such as the best way to safely open the plywood box, what our options are for removing the metal contents and what types of personal protection are appropriate for the dismantling effort,” explained Loughead.

Once the box and its contents are characterized, it will be opened and the decontamination, consolidation, dismantlement and repackaging processes will begin. This work and the crushing of TRU waste will be done inside a fire-rated metal building currently under construction at Area G.

“TRU Blue is so large, we actually had to situate it first and then construct the building around it,” said Loughead. The building is 24 feet high, 60 feet wide and 220 feet long.

TRU Blue uses its hydraulics to cut and crush TRU waste metal so that there are very few void spaces. The result is a home plate-shaped “puck” weighing approximately 80 pounds. Several pucks can fit inside a 55-gallon drum for easy storage and eventual shipment to WIPP. Finally, the now-empty wooden boxes will be cut up into flat sheets, placed inside flat metal boxes and disposed of at Area G, Loughead said.

He added, “Los Alamos is very fortunate that Environmental Management’s Deactivation and Decommisioning Focus Area recognized that the DOE complex needed an innovative process to manage oversized metal waste. We’re confident that the DVRS project at the Laboratory will help other DOE sites as they plan to develop similar operations at their sites.”

For more information on DVRS, call Loughead at 7-2157.

reaching out

Research program shows island children that science is fun

by Kay Roybal

Fairley Barnes of Environmental Sciences (EES-15), education director for the Department of Energy's Atmospheric Radiation Measurement program, explains some weather fundamentals to schoolchildren in Papua New Guinea. *Photo courtesy of the Tropical Western Pacific program*

In one area of the Third World where there's no weather channel and the Internet is nonexistent, schoolchildren are learning about weather and climate change by measuring the rate of coral and plant growth, watching how weather balloons rise, and learning about tides and sea level changes from simple experiments with everyday items.

Children on the islands of Manus in Papua New Guinea and Nauru in the central Pacific are learning the scientific principles underlying the phenomenon of global warming by studying what is happening to their environment. For the past several years, the children's teachers have been trained to use a new curriculum developed under an education initiative sponsored by the Department of Energy's Atmospheric Radiation Measurement program.

The Tropical Western Pacific component of the ARM program is managed by the Laboratory. The Manus climate research station, in operation since October 1996, and the station on Nauru, dedicated in November 1998, collect information needed to better understand global climate change. The cloud-related data gathered will allow scientists to study the way the sun's energy is transmitted, absorbed and reflected in the tropics and the role of clouds in heating and cooling the atmosphere.

The other ARM research facilities are on the Southern Great Plains in Oklahoma and Kansas and on the North Slope of Alaska.

According to TWP program director Bill Clements of Atmospheric and Climate Sciences (EES-8), an education program relevant to each specific ARM site is mandated by the program.

"We decided to use climate change and the effects relevant to this region to teach basic science concepts," he said. "The small island states throughout the world will bear the brunt of any negative effects of climate change. We want to help our host communities understand what we're doing here, what the effects of climate change might be over the next few hundred years, and also encourage young people to study all aspects of environmental science."

When the initial ARM equipment was installed on Manus, local folks were curious and a bit apprehensive about what the studies might mean, according to Fairley Barnes of Environmental Sciences (EES-15), then deputy TWP program manager and now the ARM education director.

"Some of our scientists went to local high school classes to explain what we were doing and why," she said. "It certainly pointed to a need for an educational outreach program for schools close to our project."

In the teacher workshops, climate scientists work with a group of about 30 teachers, using the program's instructional materials and performing all of the suggested activities. "We show them that science is fun and that it's easy to get students excited about experiments," Barnes said.

Some past participants have found that both learning and teaching science can be easier than expected.

"I found that the materials needed were very simple and things I can make and find all around me," wrote one teacher evaluating the course. "I used to think that materials or aids were very difficult to produce, but now I know that science is just all around me."

Other collaborators for the education initiative include the South Pacific Regional Environment Programme, Than Aung at the National Tidal Facility and Flinders University in Australia. Aung is now at the University of the South Pacific in Fiji.

Neither rain, nor snow, nor fire and closure ...

by Ternel Martinez

There's no such thing as a good time for anything as devastating as the Cerro Grande Fire to occur, but its timing created potential crises for two companies and their clients and patients. Fortunately, employees from the Chemistry (C) Division prevented those crises from coming to fruition.

The first company, CTI Inc. in Knoxville, Tenn., provides products and services for positron emission tomography, or PET, scanners used primarily for diagnosing and treating cancer, epilepsy, coronary artery disease and other ailments. CTI requires a steady supply of germanium-68 to manufacture the scanners' calibration sources. The Laboratory is CTI's sole supplier for Ge-68 and produces this vital radioisotope in its Hot Cell Facility at Technical Area 48.

CTI had exhausted its supply at about the time the fire broke out last May. The Lab obviously could not access the processed Ge-68 stored in its vault. Worse, CTI could not find a substitute source, said Gene Peterson of Actinide, Catalysis and Separations Chemistry (C-18) and site manager for the Isotope Program.

"I got a call on May 11 from the Department of Energy regarding CTI's emergency," Peterson recalled. "Without operational scanners, dozens of patients potentially could be denied adequate diagnosis and treatment."

Peterson put in an emergency request to enter the facility and obtain the radioisotopes for CTI. However, several days would pass before officials at the Emergency Operations Center felt the area was safe enough for employees to re-enter the building.

"The fire actually got to within 15 yards of the building," said Dennis Phillips of Nuclear and Radiochemistry (C-11) and team leader for Isotope Production Operations. "There still were spot fires in the canyon nearby. It was quite disconcerting."

Finally, on May 18, Phillips was told that he and fellow C-11 employees Tate Hamilton, Louie Salazar and Lisa McCurdy would be allowed inside the facility the next day. "The place smelled intensely of smoke, and there was soot everywhere," recalled Phillips. "It was very challenging for us." The four completed the task in about one-and-a-half hours and shipped about six weeks' worth of the radioisotope to CTI.

The second potential crisis involved health and personal care giant Bristol-Myers Squibb. The Laboratory provides them a monthly supply of strontium-82 for use in a biomedical generator called CardioGen. Unlike the CTI case, however, the Laboratory did not have this radioisotope in stock, much less the irradiated target needed to process and extract it.

"We get our irradiated targets from the Los Alamos Neutron Science Center (LANSCE) Division and other institutions worldwide," explained Peterson. "For this particular shipment of strontium-82, the targets came from South Africa and Russia, and they already had been shipped to us. We couldn't accept the shipment because of the Lab closure."

He said the Lab tried unsuccessfully to divert the irradiated targets. "If we didn't accept the shipment soon, the targets would be returned to South Africa and Russia, which would have resulted in an even later delivery date, though the company certainly was understanding of our situation and simply requested that the Lab do what it could," he said.

In order to process, analyze and ship the isotope on time, the Hot Cell Facility had to open no later than May 24, said Phillips. So he asked Joy Torres of the Business Operations (BUS) Division's Customs Office, which handles and processes international shipments, to delay the shipment of the targets for a week. Fortunately, it all worked out, and the company received the shipment on May 30, right on schedule.

Both companies were grateful, said Peterson. In fact, John Hoffman, director of Quality, Regulatory Affairs and Sources with CTI, wrote C Division to thank those who contributed to the effort.

"We were going to have to tell hospitals that they would have to wait to put their scanners in use. Because of your efforts, that won't be necessary … Los Alamos National Laboratory is truly a national treasure," Hoffman wrote.

Phillips said, "It's gratifying to know we were able to allow hospitals to continue treating their patients without delay. The fire had a domino effect in countless ways, but we managed to avoid one here."

Expanding explosives e

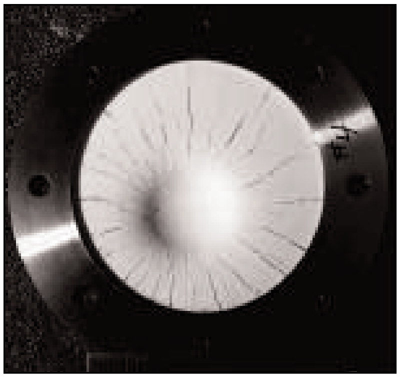
by Kevin Roark

As an alternative to gunpowder, Alfred Nobel and his father began exploring the properties of nitroglycerine, an unstable but highly energetic compound discovered by Italian chemist Ascanio Sobrero in 1847.

It wasn't until 1866, following a series of spectacular and deadly accidents at his factories, that Nobel had the idea of mixing nitroglycerine with the absorbent clay kieselguhr, and thereby inventing the much more stable explosive we now know as dynamite, the first real high explosive.

The ideas that led to dynamite have continued to evolve. In the 1940s new classes of high explosives were employed in the Manhattan Project. The familiar trinitrotoluene (TNT) and less familiar British-invented Research Department Explosive were combined to create "Composition B" and, along with Baratol, were used in the first implosion atomic bombs, the Trinity device and Fat Man, the bomb dropped on Nagasaki.

At the Manhattan Project lab, explosive "lenses" — specially shaped high explosives with a slow burning core surrounded by a fast burning exterior — were fabricated by casting liquid slurry into molds, hardening them and precisely machining the molds into specific shapes. The lenses were positioned so that when detonated around a core of fissile material, they produced a uniform shock wave that induced a spherical implosion. That implosion compressed a plutonium core into a critical mass, releasing the incredible power of the atomic bomb.



At top, The results of a hemispheric impact on high explosives show that at 65.5 meters per second the high explosive, in this case PBX 9501, is deformed, but no energetic reaction is observed. At bottom, impacted at 80.7 meters per second, however, a separate sample reacts violently, breaking the sample holder. *Photos courtesty of DX*

At a crossroads

Research into energetic materials at the Laboratory today is at something of a crossroads. Do we continue to build on work rooted largely in the past, or forge ahead, breaking new ground, or both?

One goal of high explosives, or HE, science at the Lab is to maintain a world-class base of knowledge for better understanding and responding to changes in the Lab's weapons capability. Naturally, all scientific endeavor requires, even demands, the pursuit of the unknown — pushing the outside of the envelope — and so it is at Los Alamos. That is the way things are done by those with the "Right Stuff" in the Dynamic Experimentation (DX) Division.

"The simple fact is that an energetic materials synthesis capability is on a decline in this country," said Mike Hiskey of HE Science and Technology (DX-2). "There's just not a major need for new high performance energetic materials out there in the general market."

But in the area of national security it is vitally important to maintain the capability. Issues such as the safety and reliability of aging systems and their refurbishment or replacement, terrorist and proliferant threats, and the unknown challenges of the future underscore the need for a national program that is at the forefront of new developments and technologies. The departments of Defense and Energy both recognize this and have turned to Los Alamos as one of the last places in the United States with the facilities and the people that can get the job done.

"We had to ask ourselves, if we're going to maintain this capability, should we just rest on the laurels of the past or should we go out on a limb a little?" said Hiskey. "We've decided to forge ahead with work on new classes of energetic materials."

Research at the Lab today

Research efforts at the Lab continue to focus on the HE triad of performance, safety and reliability. "We have a very diverse and active HE program at the Lab," said Alan Picklesimer, of Primary Design and Assessment (X-4). "And the work we are doing is not being done anywhere else."

The wide spectrum of HE research at the Lab includes work exploring the performance-based issue of equation of state, or that equation that dictates a certain material's properties based on volume, pressure and thermodynamics. For HE, that means a numerical description of how the product gasses drive metal.

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expertise

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HERCULES, or High Explosives Reaction Chemistry by Ultrafast Laser Excited Spectroscopies, uses extremely short laser bursts, quadrillionths of seconds in length, to get a clear picture of the shock front in a detonation wave. Fast-scale chemistry is explored to determine the chemical kinetics in a burn-front to understand better the chemical reactions, how the system develops and which reactions work the fastest with the greatest efficiency, with the ultimate goal of understanding the material's ability to drive metal.

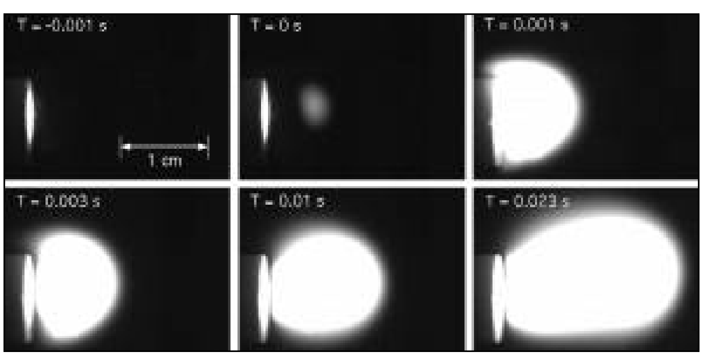
The basic physical properties of HE — such as the strength of the material and how it reacts and responds to thermal and mechanical insults — also are studied in depth. HE materials are cooked and frozen, dropped and crushed, shot with bullets and set on fire, all to better know why and how the materials work and to constantly improve both their performance and safety.

Hiskey's focus is on high-nitrogen energetic materials, or HiN, in the pursuit of discovering compounds with superior performance without sacrificing stability.

This performance vs. sensitivity equation drives the Los Alamos effort to make practical and useful materials. Such materials are key to updating the aging nuclear weapons stockpile with HE components that are safe, long-lasting, reliable and more environmentally friendly.

How HE works

Explosives, in general, employ fairly simple combustion reactions, where fuel and an oxidizer are mixed at the molecular level. The four elemental components of explosives are carbon, hydrogen, nitrogen and oxygen, and it's the ratio of these elements that govern the properties of the final product. HiN materials derive most of their energy from very high "heat of formation" — energy liberated or absorbed by a certain amount of a compound as it is formed from its constituent elements.



In this sequence a laser ignites a small sample of high explosives. In the second frame, marked T=0s a small area of illumination is observed above the sample itself just a fraction of a second before the full flame emanates from the sample.

A sample of high nitrogen content energetic material is shown burning with an extremely bright flame. High nitrogen compounds, because of their combustion properties, yield less carbon than other materials that rely on combustion from a carbon backbone.

"The synthesis of compounds known as high-nitrogen energetic materials have been the focus of our group for the past decade," said Hiskey. "These compounds form a unique class of energetic materials deriving most of their energy from their very high positive heats of formation, rather than from oxidation of the carbon backbone, as with traditional energetic materials."

The high nitrogen content typically leads to high densities, and the low amount of hydrogen and carbon also allows for a good oxygen balance, a measure of the oxygen to fuel ratio in a compound, to be achieved more easily. HiN materials have been demonstrated to be remarkably insensitive to electrostatic discharge, friction and impact.

The Laboratory is one of the few research institutions in the world with a continuing capability in HE synthesis research and looks forward to future work with HiN compounds in the quest for stable, reliable and environmentally benign energetic materials.

Other work that is unique to the Lab includes a project that imbeds small magnetic sensors inside the HE and then shocks the material to study the wave propagation inside the HE itself. "This work is wonderful for the theorists and modelers," said Picklesimer. "It results in a picture of what is happening within the HE during a detonation sequence, and again, there's no one else doing this type of work."

Looking ahead

In terms of extreme future-think, there is work with Metastable Intermolecular Composites that seeks to exploit nanoscale technology to create exothermic, or heat-producing, reactions in metals like aluminum and molybdenum. These types of 21st century, next-generation gunpowders could prove valuable as completely new forms of HE or rocket propellants.

Research and development of energetic materials continues at the Laboratory both for maintaining a capability and breaking new ground. "We do it because it's in the national interest to keep abreast of the newest developments in HE science," said Picklesimer. "We simply cannot, and will not, be left behind in this important area of science."

Ortiz wins postdoctoral publication prize

Gerardo Ortiz of Condensed Matter and Statistical Physics (T-11) was selected as the 10th recipient of the Postdoctoral Publication Prize in Theoretical Physics.

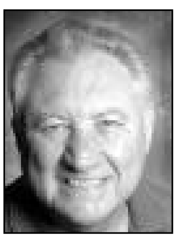
The biennial prize, jointly sponsored by the Laboratory and Leon Heller, a former Laboratory staff member and current Lab associate in Biophysics (P-21), is awarded for the best article in theoretical physics that was published or accepted for publication after Jan. 1, 1998.

The article must describe work performed primarily during the tenure of the postdoctoral appointment. Ortiz' winning paper, "Exchange-correlation Hole in Polarized Insulators: Implications for the Microscopic Density Functional Theory of Dielectrics," was published in Physical Review Letters.

Ortiz, now a technical staff member, has been at the Lab since September 1996. When he arrived at the Laboratory, he was hired as one of the prestigious J. Robert Oppenheimer postdoctoral fellows. He received his doctoral degree in theoretical physics from Ecole Polytechnique Federale de Lausanne in Switzerland.

Ortiz will receive $500 and a certificate during a colloquium sponsored by the Physics and Theoretical divisions Oct. 26. Heller, who created the prize, provides the prize money. He has paid the cash award out of his own pocket since the program's inception.

Crissman chosen president-elect of ISAC



Harry Crissman

Harry Crissman of the Bioscience Division (B-N2) is the new president-elect of the International Society for Analytical Cytology and will become its president in two years.

Crissman was elected to the two-year term during the society's biannual meeting in Montpellier, France, in May. He also received an Honorary Fellow Award in recognition of his contributions to ISAC.

As president-elect, his primary responsibility will be to organize the next international meeting in San Diego in May 2002. At that meeting, he will become president of the society for the next two years.

ISAC, which has more than 2,000 members, promotes research, development and applications in analytical cytology, which involves characterizing and measuring cells and their constituents for experimental and therapeutic purposes.

Crissman is the third Laboratory staff member to be elected to the position. The others were Scott Cram of the office of the Associate Laboratory Director for Strategic and Supporting Research and the late Paul Mullaney.

"The Laboratory was one of the developers of flow cytometry, an important technology in analytical cytology," Crissman said. "We led the way in demonstrating that cell cycle phases could be analyzed very rapidly — in minutes instead of days — and we still are among the leaders in the development of new technologies."

When Crissman arrived at the Lab in 1971 as a postdoctoral student from Penn State University, he had no idea that flow cytometry would become such an important diagnostic and research tool.

"It was something of a novelty," he said. "It's been a lot of fun seeing how the field has grown, and then becoming head of the society that helped spearhead this growth is just a great plus for me."

Hamada named fellow of ASA

Michael Scott Hamada

Michael Scott Hamada of Statistical Sciences (TSA-1) was named a Fellow of the American Statistical Association at a recent conference in Indiana.

Recognized for research in the field of industrial statistics, particularly in the analysis of designer experiments and editorial service, Hamada was one of 55 members of the society to be awarded the "superlative" honor this year.

Hamada, who earned a doctorate from the University of Wisconsin, Madison in 1987, has been a member of the ASA since 1978.

"Election to Fellow of the ASA is a singular honor that recognizes outstanding individual contributions to the advancement of statistics," said ASA Committee Chairman Norman Breslow in a recent news release.

The 18,000-member ASA, which was founded in Boston in 1839, is the second oldest professional society in the United States.

A two-year employee of the Laboratory, Hamada has recently published a book titled "Experiments: Planning, Analysis and Parameter Design Optimization," which he co-authored with University of Michigan colleague C.F. Wu during the span of six years.

The 638-page publication promises to modernize statistical experimentation in an effort to develop a new system of design and analysis that will help streamline statistical scientific experiments and improve the quality of manufacturing and industry.

"The past two decades have seen major progress in the use of

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Hamada ...

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statistically designed experiments for product and process improvement," said Hamada. "We introduce some of the newest discoveries in the design and analysis of experiments as well as the applications to system optimization, robustness and treatment comparisons in the diverse fields of engineering, technology, agriculture, biology and medicine."

Jacobs new HR-6 leader

Dolores Jacobs

Dolores Jacobs is the new group leader of Training and Development and Training Integration (HR-6).

Jacobs has worked at Los Alamos 12 years, most recently as a team leader in pre-college science education program in the Lab's Education Program Office (STB-EPO).

"I have a deep commitment to developing people to achieve their full potential. If workers believe that their management cares about them as people, they will be loyal to that manager, to their work and to the institution," she said.

A former public school teacher in Texas and Tennessee and Girls Club director in Tennessee, Jacobs was a program coordinator for the Museum of International Folk Art in Santa Fe before joining the Lab in 1988.

She has received two Distinguished Performance Awards for her team efforts on behalf of education initiatives at the Laboratory.

Jacobs earned a bachelor of science degree in 1970 from New Mexico State University. She has done graduate level work at the University of Tennessee and the University of Virginia.

Voelz honored by Health Physics Society

Retiree **George Voelz** has been honored by the Health Physics Society, a national organization whose members specialize in occupational and environmental radiation safety.

George Voelz

Voelz, whose research has included the study of the long-term effects of exposure to plutonium, received the society's Distinguished Scientific Achievement Award in recognition of his contributions to the science and technology of radiation protection.

He has been a member of the HPS for about 40 years and has presented several papers on radiation protection at national and local meetings. He also has participated in local activities such as training teachers and helping with a health physics booth at the state fair.

Voelz, who received a medical degree from the University of Wisconsin in 1950, worked at the Laboratory from 1952 to 1957, then rejoined the Lab in 1970 as leader of the Health Division. He was later assistant division leader for research and section leader for epidemiological research before retiring in 1990.

He continues to work part time at the Lab as a guest scientist and also is a consultant in occupational medicine. He has testified as an expert witness in a number of legal cases involving possible radiation exposure.

Voelz is an honorary lifetime member of the National Council of Radiation Protection and Measurements and served for eight years as a member of the International Commission on Radiological Protection.

In Memoriam

Basil Lewis

Lab employee Basil Lewis died Feb. 11. Lewis graduated in 1959 from Buffalo Valley High school. He served in the U.S. Army from 1961 to 1965. Lewis came to the Lab in 1978 with the former Branch Shops (SD-5) as a prototype machinist. In 1993 Lewis worked in Mechanical Fabrication (WX-13). In 1996-1997 he worked with the former Waste Management and Environmental Compliance (NMT-7) group.

Joseph Burke

Former Manhattan Era employee Joseph Burke died Feb. 29. He was 85. He received a doctoral degree from Cornell University in ceramic science in 1940. Burke came to work at the Lab Oct. 6, 1943, as a metallurgist. During World War II, he designed, built and then managed the first installation for the conversion of plutonium into atom bomb cores. Burke served as president of the American Ceramic Society and was a member of the National Academy of Engineering. He was a fellow of several other organizations, including the American Institute of Metallurgical Engineers, American Society for Metals and the Institute of Metals in London.

Staudhammer named new deputy division leader for NMT

Karl Staudhammer is the new deputy division leader for programs and science for the Nuclear Materials and Technology (NMT) Division.

Karl Staudhammer

Staudhammer, who joined the Lab in 1978, recently has served as team leader, deputy and acting group leader in both the Materials Science and Technology (MST) and NMT divisions.

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Employee service anniversaries

August

35 years
Richard Cordi, ESA-WE

30 years
John Browne, DIR
Gerald Hale, T-16
William Martin, E-ER

25 years
Leroy Alderete, DX-8
Gaetano Arnone, NIS-6
Robert Barbero, MST-7
Gregory Bayhurst, E-ET
Thomas Bement, TSA-1
Kenneth Brandt, ESH-14
C. Jerald Buchenauer, NIS-9
Donald Cobb, ALDTR
Necia Cooper, STB-DSTBP
Rudolph Fernandez, NMT-15
Jo Ann Glick, BUS-1
Henry Johnson, CIC-9
Sherry Jones, NMT-7
Gilbert Montoya, FWO-UI
Tracy Schofield, EES-15
Joseph Tesmer, MST-8
Michael Thuot, LANSCE-8
Carl Vecere, DX-5

20 years
Bruce Barraclough, NIS-1
Brent Boyack, TSA-10
Karl Braithwaite, GR
Charlene Cappiello, NIS-6
Michael Cappiello, APT-TPO
Michael Cisneros, CST-11
Ann Marie Kelly, MST-6
Judith Kilburg, HR-5
Frank Reeves Jr., NMT-3
Diana Sena, NMT-4
Stephen Sydoriak, CIC-12
Davis Tonks, X-7
Thomas Trezona, CIC-18

15 years
Elizabeth Affeldt, BUS-5
Stephany Bouchier, CIC-7
Shao-Ping Chen, T-11
Brenda Derosier, ESA-FM-ESH
Craig Eberhart, ESH-17
Patricia Flynn, BUS-1
Robert Griego, AA-4
Jamie Lee Griffin, CIC-1
Lorraine Hayes, CST-DO
Gary Herrera, NMT-15
John Huang, NMT-5
Judith Kaye, QIO
Kenneth Koch, NW-SC
Patrick Lynch, DX-1
C.B. Mombourquette, MST-11
Patricia Nickel, TSA-3
Robert Nolen, ESA-TSE
Robert Okagawa, NW-SS
Martha Quintana, HR-7
Richard Reynolds, ESH-13
Kathleen Roybal, NIS-4
Jacob Rutten, NMT-8
Edward Salazar, ESH-1
Mable Salazar, S-7
Elaine Sandoval, CIC-10
Joyce Takamine, X-8
Albert Williams, B-N1

10 years
David Armstrong, NMT-5
Christoph Borel, NIS-2
Deborah Figg, NMT-15
Paul Ginsparg, T-8
Susan Gonzales, BUS-1
William Hodgson, NIS-RD
Thomas Kluegel, CIC-12
Dequan Li, MST-STC
Guy Lussiez, E-RF
Melissa Martinez, NMT-15
Jonathan McClellan, ESA-WMM
Ronald Morgan, ESH-12
John Moya, ESA-TSE
Martin Muller, PM-DS
Ruth Ann Neal, BUS-8
Louise O'Brien, ESA-TSE
John Stephenson, ESA-FM-ESH
E.A. Strietelmeier, E-ET
Jacob Tafoya, ESA-WMM
Jeanette Urbina, NMT-8

5 years
Jeffery Bryant, CIC-13
Danny Bullard, ESA-FM-ESH
Thomas Carter, NMT-8
Robert Cary, B-N2
Bradford Clements, T-1
Randal Hodges, BUS-7
Paul Kwiat, P-23
Celestino Quintana, BUS-7
Eliud Vigil, NMT-DO
Michael Walkord, BUS-7

September

35 years
Larry Blair, ESS
David Fradkin, DX-3
Jan Studebaker, P-22

30 years
Thomas Sampson, NIS-5
Louis Schrank, P-24
Larry Tellier, NMT-8

25 years
Fred Baker, CIC-9
Charles Bell, TSA-10
David Curtis, NIS-7
Joseph Danna Jr., B-N2
Arlo Dornhoff, CIC-5
James Dyson, NIS-6
C.L. Edwards, EES-3
Jane Gladson, NMT-4
Byron Goldstein, T-10
Catherine Guillen, BUS-1
Grady Hughes III, X-6
Lynn Maas, TSA-DOD
Adelia Martinez, BUS-5
Carl Martinez, NMT-15
Donald Ortiz, ESA-MT
Ricardo Romero, CIC-5
John Sanchez, DX-2
Rosendo Sanchez, LANSCE-12
Larry Schwalbe, TSA-DOD
Jean Trujillo, DX-7
Toby Trujillo, BUS-8

20 years
David Archuleta, NMT-5
David Beck, P-21
Gerald Bustos, SNS-03
Norman Callaway, LANSCE-6
Frederick Edeskuty, ESA-WE
Alyce Elliott, BUS-2
Edward Gonzales, C-9
Robert Gonzales, NMT-11
Theodore Karki, NMT-DO
Jeffrey Keddy, DX-5
Dennis Martinez, BUS-6
Lubella Martinez, S-6
David Moore, DX-2
William Moss, FWO-WFM
Charles Owens, NMT-5
Eddie Padilla, ESA-WMM
Carolyn Robinson, CIC-1
Jose Tafoya, ESA-EPE
Donald Trujillo, ESH-5
Robert Wheat Jr., LANSCE-9
Sheryl Willis, NMT-7

15 years
Larry Bays, FWO-SEM
Michael Bernardin, X-2
Dean Cole, B-DO
Joe Coleman, S-5
Gary Dilts, X-3
Kurt Duerre, DX-5
Joe Emerson, AA-2
Larry Field, NMT-11
Timothy Fife, DX-5
Robert Fulton, DX-3
Bruce Gallaher, ESH-18
Irma Gonzales, NIS-4
Steven Gonzales, ESA-WMM
Herbert Harry, DX-2
Mark Hoffbauer, C-1
Charles Hollas, NIS-6
Keith Jacobson, ESH-17
Susan Kreiner, ESH-IMPT
Stephen Lloyd, ESH-IMPT
Barbara Lopez, C-9
Katherine Martinez, ESA-FM-ESH
Allen Mathews, X-4
Timothy McCurdy, NMT-9
Amy Meilander, CIC-5
Diann Mills, P-22
Kelly Naranjo, BUS-6
Harvey Nutter, B-DO
Manuel Pacheco, MST-6
Vonetta Pompeo, CIC-6
Dennis Powell, TSA-5
Gerald Ramsey, S-8
Paul Redman, BUS-2
Shelly Roybal, BUS-DO
Lars Soholt, E-ER
Erika Spallitta, CIC-1
Paul Stanek, MST-6
Edward Van Eeckhout, TSA-4
K. Varjabedian, CIC-14
Phillip Villareal, CIC-2
Susan Voss, NIS-8
Paul Wantuck, ESA-EPE
Mark Zander, CIC-12

10 years
Martin Bowidowicz, NMT-9
David Breshears, EES-15
William Bruno, T-10
Brian Bush, TSA-4
Thomas Crespin, ESH-5
Norman Delamater, X-2
Michael Fitzsimmons, LANSCE-12
Donna Gadbois, B-N2
Deanne Idar, DX-2
John Joyce, MST-10
David Montoya, CIC-8
Russell Mosteller, X-5
Ronald Nakaoka, NMT-7
Patrick Reardon, ESA-EA
Francesco Venneri, ESS

5 years
Debra Garcia, CIC-14
John Grove, X-3
Randall Johnson, P-24
Mark Lausen, BUS-7
Xavier Lujan, BUS-7
Thomas Murphy, P-24
Linda Nuttall, BUS-8
D. Palmer Smitherman, X-7

Staudhammer ...

continued from Page 9

During his career he has conducted research on a variety of property-microstructure relationships including microscopy, metallurgy and transformations of plutonium. The last seven years he has been teaching the "Introduction to Plutonium Metallurgy" class at the Lab and other Department of Energy sites.

Staudhammer received a bachelor's degree in mechanical engineering from California State University at Los Angeles, master's and engineer's degrees in mechanical engineering and materials science from the University of Southern California and a doctorate in physical metallurgy from New Mexico Institute of Mining and Technology.

He is a U.S. Senior Scientist Humboldt Fellow and an American Society for Materials International Fellow. He received the DOE's Weapons Recognition Award for Outstanding Technical Achievement for electron microscopy evaluation of plutonium in 1987.

This month in history

October

1847 — Maria Mitchell is the first person to discover a comet visible only through a telescope

1884 — Elfego Baca arrests a cowboy near Frisco, N.M., then for 33 hours holds off a group of the cowboy's friends seeking his release

1923 — The U.S. Senate begins investigating the Teapot Dome scandals

1938 — DuPont announces that its new synthetic fiber will be called "nylon"

1942 — Gen. Leslie Groves asks J. Robert Oppenheimer to head Project Y, the proposed laboratory for weapons physics research and design

1952 — Operations begin at the Savannah River Plant in South Carolina with the start-up of the heavy water plant

1961 — The Soviet Union detonates the largest nuclear explosion with a yield of 58 megatons

1964 — Lab Director Norris Bradbury receives the Achievement Award from the New Mexico Academy of Science, given to recognize outstanding work by a person engaged in scientific activity in the state

1974 — Ownership of Fuller Lodge in downtown Los Alamos is transferred from the federal government to Los Alamos County

1987 — The U.S. Senate rejects the Supreme Court nomination of Robert Bork

1994 — In Florida, Vice President Al Gore dedicates the National High Magnetic Field Laboratory, in which the Lab has a major research role

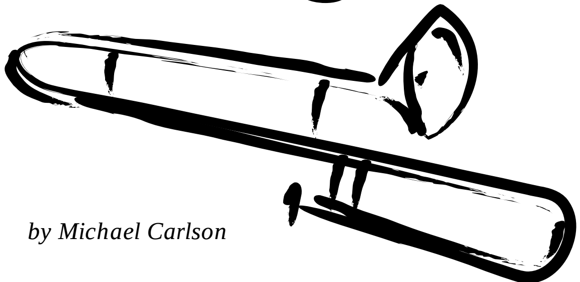
1999 — Legislation creating the National Nuclear Security Administration within the Department of Energy is signed into law

Syndicated material

Removed at the request of the sydicate

spotlight

You gotta lotta brass



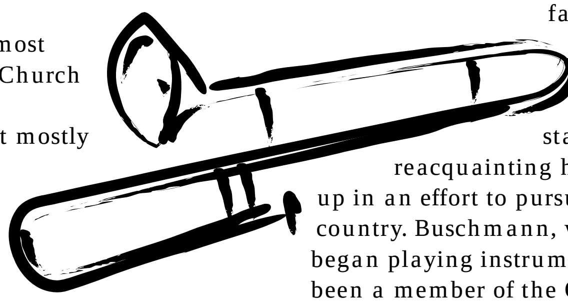
by Michael Carlson

Music is a fact of life for four Laboratory scientists who comprise the local Quemazon Quartet, a brass musical group consisting of two trumpet players and two trombonists whose popularity is growing in Los Alamos and at the Lab.

Stan Brown, Phil Jones, Wayne Buschmann and Mike Ebinger don't plan to quit their day jobs for a life on the road, however. Instead, they're satisfied with occasional jobs around Northern New Mexico and the local fame they've earned during the time they've been playing together.

So far, they have played for two division picnics, several group Christmas parties, a recent Lab Fellows indoctrination and many church functions.

The four can be found practicing almost every Tuesday afternoon at the United Church of Los Alamos.



They'll play just about anything, but mostly classical and jazz music, particularly ragtime jazz. The quartet doesn't play country or hard rock because it doesn't have the instruments to produce the required sounds for such genres.

Originally from Omaha, Neb., Jones is a staff member of Fluid Dynamics (T-3). He started the band three years ago and plays one of the trombones, an instrument he learned in elementary school and later played in college for fun.

Brown, another trombone player, is an advanced control theorist at the Los Alamos Neutron Science Center (LANSCE) and has been with the group two years. A native of Casper, Wyo., he began playing in grade six. As a senior in high school he was chosen to play at the Music Educator's National Conference, a national music festival. Working his way through college at the University of Wyoming, he played in dance bands in and around Laramie, Wyo. He was a member of both the Casper Municipal Band and the Casper Civic Symphony, now the Wyoming Symphony.

Aside from trombone playing, Brown is proficient at playing the five-string banjo.

"I gave up the idea of professional music," said Brown. "I did it in college. You go to work at 9 p.m. and go home around 3 a.m. Your weekends are all screwed up."

For Ebinger, music is genetic. His dad was a trumpeter in the 5th Army Band at Fort Carson in Colorado Springs; his mother taught music for the Los Alamos Public Schools and remains active in her profession by holding various workshops throughout the country.

His father-in-law taught classical music at the University of Nebraska, while his paternal grandfather played with polka bands in Minnesota. Ebinger's brother plays brass professionally in Phoenix.

An original member of the quartet, Ebinger is a soil scientist with Environmental Science (EES-15), and like his father, plays the trumpet.

Bioscience Division (B-S2) postdoc Buschmann played the trumpet for 12 years until he started college. Ten years later, he is reacquainting himself with the instrument he gave up in an effort to pursue intercollegiate track and cross-country. Buschmann, who grew up in Massachusetts, also began playing instruments in elementary school, and has been a member of the Quemazon for about four months.

"I don't know what I was thinking back then," jokingly referring to the trumpet as his choice of instrument.

Aside from playing sheet music, Buschmann has tried writing a few songs of his own. He would like to write more in the future, but doesn't know when he'll have the time for such an endeavor.

Although the quartet doesn't have any concerts booked at the moment, Jones said they will probably be busy during the upcoming holiday season, especially Christmas.

Reflections
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