

Probing Popo

by Kathy DeLuca

Monitoring gases emitted by volcanoes provides important insights into deep-Earth processes and shows promise as a predictor of eruptive activity, but getting close enough to collect gases to measure is inherently risky.

Laboratory researchers are developing techniques to measure volcanic gases from a safe distance. They recently tested their methods on Mexico's Popocatepetl, a 17,800-foot volcano with more than 300,000 people living in the danger zone on its flanks.

In the past, the most common monitoring practice required a person go to a fumarole or vent, perhaps into the crater itself, to collect the gas. Researchers have been killed collecting samples.

Steve Love of Space and Remote Sensing Sciences (NIS-2) and Fraser Goff of the Earth and Environmental Sciences Division (EES-6) have developed a way to monitor volcanic gases remotely with infrared spectroscopy. They are able to obtain IR spectra using the sky as a background, permitting them to work miles from the crater.

Traditional IR monitoring techniques mandate the presence of hot rocks or lava, which act as a

continued on Page 3

The path ahead

by John R. Gustafson

With changing contractual requirements, new players in Washington, shifting global threats and opportunities, how can the Lab plan for the future?

The answer, according to Director John Browne, is that the Lab can participate in shaping its own future — through focus, teamwork, striving for excellence in all areas and continuing to apply the best science and technology in support of the nation.

But getting there will require continuous improvements in the Laboratory's operations, how employees work with one another and relations with our customers and community.

The path the Lab is traveling passes a number of internal landmarks demanding action, including business processes and costs, an aging infrastructure, and issues of trust and communication in the workplace. The path also winds through an ever-shifting landscape of external events, such as increasing scrutiny and expectations for accountability and performance with the establishment of the National Nuclear Security Administration.

This path was recently mapped out by Browne and the Lab's Senior Executive Team — Deputy Lab Directors Bill Press, Dick Burick and Joe Salgado, and Associate Lab Directors Don Cobb, Tom Meyer and Steve Younger. This group engaged the Lab's division and program directors last October to discuss vision, leadership, workforce issues and other matters affecting how the Lab operates and where the path forward leads.

Browne and the SET then met for several days in December and January to consider the many discussion points raised in October. They emerged with a number of guideposts for the path, including a revamped vision statement, a

strategic business direction, defined focus areas in which the Lab will concentrate efforts, top-level institutional goals tied to the focus areas, and decisions and concrete actions to get us on our way.

When this issue of L.A.N.L. went to press, Browne was scheduled to discuss these issues with employees March 7 in the Director's State of the Lab presentation.

Vision Statement

We serve the nation by applying the best science and technology to make the world a safer and better place.

"We were looking for a simple statement pointing to a future in which all employees and stakeholders could see themselves," Browne said. "National security — in the broader sense but clearly including our traditional nuclear weapons role — remains paramount. We are and will continue to be an institution that responds quickly to national security challenges by developing and applying the best science available. That is what we want people to think of when they think of Los Alamos.

"We want to spread this statement widely through the work force so that every employee comes to know and recognize it," Browne said.

Strategic Business Direction

Los Alamos will support the National Nuclear Security Administration by being a unified and customer-focused lab with outstanding performance in all areas.

"NNSA is our new boss in Washington," Browne said. "NNSA was created by Congress to address many of the reports issued over the last 10 years regarding the inefficiencies and

continued on Page 2

The path ...

continued from Page 1

bureaucracy that were strangling the Lab's ability to do its job for the nation. We must help NNSA succeed. The best way to do that is by bringing our best science and engineering to the table to solve NNSA problems (customer-focus) and then by acting as a single lab (unified) in representing ourselves outside the lab. Of course, the bottom line for us is not profit, but outstanding performance.

"Our goal is to be outstanding in all areas. For example, we must recognize that being ahead of schedule and under budget — not merely being on time and on budget — is the mark of excellence.

"Los Alamos has great scientists and great entrepreneurs, but we are not a well-disciplined institution. We spend a lot of internal effort on our own cumbersome processes, effort that could better be used for science and programs. If we are to achieve our strategic business direction, we need to become more disciplined. We cannot manage such a complex organization by exceptions to policies.

"This does not mean we want to stifle creativity and innovation in science. But to achieve outstanding performance in our business operations we cannot have customized processes, equipment and decisions for every individual. We need effective, streamlined processes that minimize the amount of paper.

"Do we have the energy and resolve to go to the next level of performance? It's not going to be easy, but the nation demands more of us each year, and we must demand at least as much of ourselves. It will take time to get there and, meanwhile, we can't lose sight of our mission requirements while we are reaching for operational excellence," Browne said.

Focus Areas

- Values
- People
- Science and engineering
- Customer
- Costs
- Integrated management

Institutional Goals

- Continuous improvement of safety and security
- Improve predictive capability for stockpile certification
- Meet pit production and certification goals
- Establish mission need and institutional strategy for Advanced Hydrotest Facility
- Develop new partnerships with DoD and DOE
- Deliver neutrons and protons safely and reliably for all LANSCE users
- Focus on diverse, entry level and strategic hiring
- Lower costs, reduce bureaucracy and modernize equipment for greater productivity
- Maintain major projects on cost, scope and schedule with improved customer communication
- Begin implementation of facility consolidation and modernization

Key Themes

Business and facility issues weave through several of the goals and focus areas. Business processes that do not support the Lab's programmatic mission efficiently and an aging infrastructure that is increasingly strained to support modern scientific and technical activities are two examples.

Accountability also is a recurring theme, both in how employees and managers meet their individual responsibilities and serve as responsible stewards of public funds, how the Lab

delivers on commitments to customers and stakeholders, and how the Lab manages projects.

"Accountability for improved management of projects and delivery on programmatic commitments is the key to continued support for our scientific and technical excellence," Browne said.

In a recent meeting with program and division directors to discuss the Lab's future, Browne emphasized to the managers their responsibilities to model the behaviors sought and valued by the institution — such as acting in a disciplined fashion and demonstrating trust, openness and honesty with employees. Managers also carry a crucial role in communication, both to engage employees and hear their ideas and concerns and to convey information about Lab decisions and items of discussion.

Finally, work-force issues — recruitment, retention, training and mentoring — will continue to require management attention.

Specific Actions

Browne and the SET also have initiated a number of specific actions to set the Lab on this newly defined path. For example, the hiring moratorium is being lifted to allow additional entry-level hires to bring in new skills and perspectives. This is in addition to the ongoing program of strategic hires. The aim is to bring in more new staff to address the hundreds of retirements expected over the next five years.

Other specific near-term actions include establishing required training for all new managers, reviewing the present nonmanagement status of team leaders, consolidating policies and procedures across the Lab where possible and reviewing job content of levels 5 and 6 in the OS job series.

The decision to proceed with seeking DOE approval for a child-care center also emerged from the SET retreat. "This has been an issue that has long demanded a solution," Browne said. "We have been working with the community to develop a child-care solution that works for the employees and the town. I am optimistic that DOE will help us move forward quickly."

On any path, the journey itself is often as important as the destination. Browne noted that how we conduct ourselves as individuals, how we interact with our co-workers as teammates striving for a common goal, how managers and employees communicate with one another and how we engage with and meet the needs of our customers and our neighbors will ultimately determine the endpoint of this path.

The Los Alamos News Letter will present more detailed information on the Focus Areas and Institutional Goals in the weeks ahead.



LANL, the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located at TA-3, Building 100, and can be reached by e-mail at newsbulletin@lanl.gov, by fax at 5-5552, by regular Lab mail at Mail Stop C177, or by calling the individual telephone numbers listed below.

Editor:
Kathy DeLucas, 7-1455

Managing editor:
Denise Bjarke, 7-6103

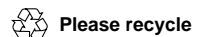
Graphic designer:
Edwin Vigil, 5-9205

Contributing photographers:
LeRoy N. Sanchez, 5-5009
Edwin Vigil, 5-9205

Contributing writers:
Nancy Ambrosiano, 5-4610
Kathy DeLucas, 7-1455
John R. Gustafson, 5-9197
Todd Hanson, 5-2085
Kay Roybal, 5-0582
John A. Webster, 7-5543

Editorial coordinator:
John A. Webster, 7-5543

Los Alamos National Laboratory is an Affirmative Action/Equal Opportunity employer. It is operated by the University of California for the U.S. Department of Energy.



Failure to obtain a classification review

(Part of a 10-part series on easily avoided security errors.)

Imagine this common scenario: A worker prepares a document on an unclassified computer that contains no classified information. However, in seeking reviews and comments, one subject-matter expert accidentally inserts classified information. The final draft does not go through an authorized derivative classifier and is sent on e-mail to colleagues, one of whom discovers the classified information. This results in a reportable incident.

Failing to obtain a classification review is an error that can result in the potential or actual disclosure of classified information to unauthorized personnel. If a classified

document is written on an unclassified computer or sent on e-mail, the computer must be sanitized and the e-mail and technical servers also may be affected.

What is sometimes thought to be an unclassified document may become classified by simply adding a word or two. When security systems information or technical weapons information are included in a document, have an ADC look at the material before sending it out for review — and check it again once comments are added. Keep those written comments until classification is determined in case they need to be protected or destroyed as classified. An ounce of prevention can go a long way toward protecting our national security.

Probing ...

continued from Page 1

source of IR radiation, or an artificial IR source placed on the opposite side of the monitored plume, typically requiring close access to the volcano. Additionally, infrared monitoring is tricky because Earth's atmosphere normally contains gases, mostly water and carbon dioxide, both of which are strong IR absorbers.

The Lab researchers take advantage of recent advances in compact, portable IR spectrometers and laptop computers. One strength of their technique is that it allows simultaneous measurement of a variety of gas species and nearly continuous measurements of changes in the gaseous concentrations.

In February 1997, Love and Goff set up their equipment about three miles from the Popocatepetl crater. The results, published in the journal *Nature*, surprised them: From Feb. 21 through Feb. 24, they monitored the gas venting from the volcano. On Feb. 25 and 26, the volcano erupted in an ash explosion. In the days before the eruption, the data showed a steady increase in silicon tetrafluoride relative to the amount of sulfur dioxide. Immediately after the eruption, both gas levels were extremely high, followed by a rapid decline.

Previous research indicated that silicon tetrafluoride increases when

temperatures fall inside the volcano. The gas is not present at magmatic temperatures. This meant that the gas cooled before the explosion.

The team speculates that this cooling indicates an expansion occurred as the plug in the volcano's plumbing system began to give away before the explosion. As the plug weakened, releasing gas, the pressure and temperature decreased, resulting in an increase in silicon tetrafluoride.

Eventually, the team believes the plug failed catastrophically, producing the observed explosion. A large drop in temperature and pressure followed, and the observed spike in silicon tetrafluoride and sulfur dioxide resulted.

The team says a new constriction within the volcano formed that caused the gases to return to normal levels.

These data are important because such an explosion is driven by gas as opposed to the movement of magma. Future observations of these trends could warn scientists of similar explosions.

In 1998, the team returned to Popocatepetl and

observed large bursts of carbon dioxide not seen the previous year. These observations, together with ash and pumice sampling, suggest that Popocatepetl is incorporating limestone underlying the volcano into its magma as it rises to the surface. The results, which will appear in the journal *Chemical Geology*, provide an example of how IR remote sensing can give new clues about geologic processes inside Earth.

Such results make researchers confident that infrared spectroscopy can be valuable in studying volcanoes like Popocatepetl. More research is necessary to develop a device that could provide an early warning of volcanic activity.



Dale Counce of Geology and Geochemistry (EES-1), left, and Steve Love of Space and Remote Sensing Sciences (NIS-2) safely removed from Popocatepetl, use their newly developed monitoring equipment to analyze volcanic gases. Photo courtesy of Goff

Exceptional students get exceptional opportunity

by Kay Roybal

Nearly a dozen outstanding undergraduate students from around the country will get an unique opportunity to explore cutting edge bioscience research this summer, courtesy of the Laboratory and the National Science Foundation.

The NSF-supported program, Interfaces in Bioscience, will recruit 10 students each summer to intern in the Bioscience (B) Division for 12 weeks. The program is targeted toward superior students who wouldn't normally be exposed to research at their schools and students from minority groups traditionally underrepresented in science and technology fields.

"Our program is based on our belief that Los Alamos is an exceptional place in which to learn to do science," said Program Director Tracey Ruscetti of B Division (B-N2). "We're targeting undergraduate students before they make critical career decisions that may take them out of science and technology fields.

"There's a revolution in bioscience

'Our program is based on our belief that Los Alamos is an exceptional place in which to learn to do science.'

that requires multidisciplinary and multiscale approaches," she said. "Many schools don't have the resources or expertise to do traditional bioscience research, let alone the type of approaches now being used. Here at Los Alamos, these different approaches and different disciplines are merging to create a unique research environment for bioscientists and an extraordinary learning opportunity for undergraduate students."

B Division has paired with Science and Technology Base (STB) Programs to launch the three-year program. STB staff will direct the administration of the program, including recruiting students and tracking the program's progress. Applicants will be considered until March 19.

Students selected for the program will be placed with mentors with whom they will work closely on specific

projects. For example, a student could study metabolic and regulatory networks in cells using the Laboratory's advanced capabilities in bio-computing. Program staff

envision intense student/mentor relationships within a framework of collegial interactions among the students that will serve as a support network, both socially and scientifically.

"Plans for group interactions include a journal club, research presentations by both students and mentors, and informal social get-togethers," said Jim Freyer, program co-director.

The Interfaces in Bioscience program has two primary objectives. The first is to provide outstanding students with a rewarding and meaningful research experience. Perhaps as importantly, the program can serve as a tool to attract new top-flight talent to the Lab work force.

"We would like to see it grow into a mechanism for recruiting and maintaining students in science fields," Ruscetti said. "We want to give them an experience that makes a career in science more attractive."

A new class for managers

by Kay Roybal

How can the interaction between new Energy Secretary Spencer Abraham, Sen. Pete Domenici, R-N.M., and NNSA chief Gen. John Gordon impact Laboratory funding? Alumni of the Leadership Center's Management Institute got an earful at a February seminar conducted by Washington pundit Jim Thurber, director of the Center for Congressional and Presidential Studies at American University.

Thurber spent two days at the Laboratory instructing a new class for managers on the mechanics of money and people, and updating members of previous classes on the changes ushered in by the recent election. Along with Government Relations Office Director Karl Braithwaite, Thurber walked his audience through the finer points of funding the Lab and managing sponsor relations.

A social scientist often interviewed on national television about complex political matters, Thurber said public uncertainty about the country's priorities contributes to funding uncertainty.

"There's no consensus in society on what we should be doing, or what the problem is," he said. "But funding decisions will be made in Congressional committees."

His Leadership Center course tracks how the appropriations process works, how research and development



Washington teacher and political pundit Jim Thurber delivers the lowdown on how money is obtained for scientific research to a group of Laboratory managers at the Leadership Institute. Photo by LeRoy N. Sanchez

programs are funded, how funds flow to the Department of Energy and program offices, and finally, to the Lab. Along the way, Abraham, Domenici and Gordon will undoubtedly be important players.

Management Institute alumna Fairley Barnes of Land Surface Processes (EES-10) said her only complaint about the course was that it was too short.

"What I got out of it was a much clearer understanding of the interaction between the changing politics in D.C. and how it affects our research possibilities," she said.

2001 SCIENCE DAY

at Los Alamos National Laboratory

by John A. Webster

A dazzling array of scientific and technical achievements — work described by Director John Browne as “what we really do” — was on display last month for the Laboratory’s first Science Day.

In a series of invited talks, Lab researchers outlined their current work in quantum computing, protein folding, fluid instabilities, particle physics, proton radiography, perceptual geometry, new materials and tracking the AIDS virus.

Nearly two dozen posters described research in atom trapping, elastic properties of rock, properties of plutonium and its environmental mobility, the Lunar Prospector spacecraft, fusion energy, neutron scattering research, high-temperature superconductivity, DNA analysis and other areas.

“It’s a pleasure to see some of the spectacular science and technology that goes on here at Los Alamos,” Gen. John Gordon, director of the National Nuclear Security Administration, said in his introductory remarks at the Feb. 13 event.

Gordon, a special guest with Mildred Dresselhaus, former director of the Department of Energy’s Office of Science, said he was especially impressed that much of the research on display was accomplished during the past year, which he acknowledged was a difficult one for the Lab.

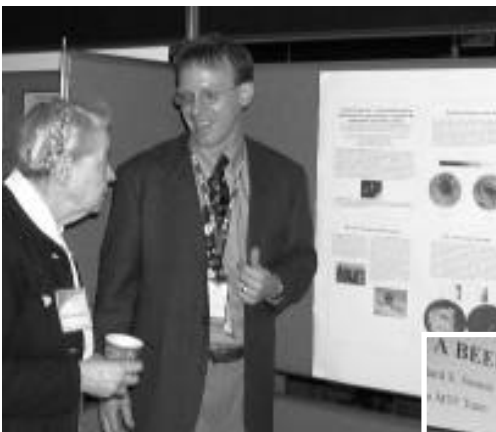
He said the NNSA intends to support a solid scientific basis for the work at the national laboratories, which he described as vital for national security.

Dresselhaus, who represented acting Office of Science Director James Decker, said the Laboratory played a key role in the history of science of this country. “Before Los Alamos, the United States was just another country in science,” she said. “After the war [World War II], we were a leader.”

In addition to the talks and posters, tours were offered to the Los Alamos Neutron Scattering Center and the National High Magnetic Field Laboratory. Posters from several programs also were displayed in the Otowi Building lobby, and the talks were broadcast around the Lab on LABNET.



In the photo above, Gen. John Gordon, director of the National Nuclear Security Administration, standing, speaks to a full house at the Study Center during the Lab’s first Science Day on Feb. 13. The audience included, in the front row, left to right, Deputy Laboratory Director Bill Press, former Department of Energy Office of Science Director Mildred Dresselhaus and Laboratory Director John Browne. Photo by LeRoy N. Sanchez



Science Day poster sessions in the Study Center attracted crowds of interested observers, including Dresselhaus (above photo). Photos by Edwin Vigil





Deanne Idar

Deanne Idar of the Dynamic Experimentation (DX) Division has been appointed project leader for the high explosives science project under the Program Office for Materials Dynamics. Idar, who has been at the

Laboratory for 10 years, has an eight-year background in high explosives research, including test activities to study nonplanar shock and low-amplitude impact initiation thresholds and behavior, and mechanical properties characterization. Before the new appointment, she served for approximately 22 months as the project leader for HE surveillance in support of the research activities to evaluate chemical and physical aging effects on high explosives.

Joseph Borovsky of Space and Atmospheric Sciences (NIS-1) has been selected as



Joseph Borovsky

space physics and aeronomy editor of *Eos*, the American Geophysical Union announced. Borovsky, a 19-year veteran of the Lab, works primarily on NASA-funded research in space physics, plasma

physics and surface physics. His recent efforts have been focused on turbulence, the aurora and Earth's magnetosphere. *Eos* is the weekly AGU newspaper of geophysics, carrying refereed articles on current research and on the relationship of geophysics to social and political questions, news, book reviews, AGU journal and meeting abstracts, meeting programs and reports, and more. It goes out to 130 countries.

Herb Funsten is the new director of the Laboratory's Center for Space Science and Exploration. Funsten, a Laboratory employee since 1990, is



Herb Funsten

active in developing instrumentation for measurement of the near-Earth and interplanetary space environment. He is a member of the Lab team that developed mass spectrometers for NASA's Cassini and

Deep Space 1 missions. In addition to space physics, Funsten's research interests include detector physics and the study of the interaction of energetic ions in solids. The center was formed in 1999 under the Nonproliferation and International Security (NIS) Division to enhance the civilian space efforts across the Laboratory.

Tom Buhl, chief scientist for the Environment, Safety and Health (ESH) Division, has been appointed to the New Mexico Radiation Technical Advisory Council. The

continued on Page 7



Laboratory innovators recognized

by Todd Hanson

Innovative research at the Laboratory resulted in the awarding of 57 U.S. patents last fiscal year, along with the approval of 30 commercial licenses and the generation of \$1.3 million in license income.

The Lab's license portfolio now contains more than 600 noncommercial licenses with academia, government entities and other nonprofit organizations and more than 100 active commercial licenses.

The innovators who contributed to this impressive record last year were honored Feb. 5 at the annual Patent and Licensing Awards Ceremony. Awards were given to about 260 current or former employees at the event, which was sponsored by the Industrial Business Development (IBD) Program Office.

The recipient of the Distinguished Patent Award was Gary Selwyn of Plasma Physics (P-24) for his Atmospheric-pressure Plasma Jet technology, which produces a stream of reactive chemical species plasma that

can clean, decontaminate, etch or coat surfaces. The technology quickly converts a vast range of organic residues or toxins into water vapor, carbon dioxide and other nontoxic gases.

Lloyd Young and Jim Billen of the Spallation Neutron Source (SNS) Division received the Distinguished Copyright Award for development of the Phase and Radial Motion in Electron Linear Accelerators, or PARMELA, computer code. This code simulates the performance of electron and ion accelerators and beam-transport lines.

The recipient of the Distinguished Licensing Award was Mahlon S. Wilson of Electronic and Electrochemical Materials and Devices (MST-11) for his work on hydrogen fuel cells, which has led to collaborative agreements with industry in support of the technology.

Innovators and the institution share income from patents and licenses, according to University of California policy. Collectively, last year's innovators received \$494,000 in income generated by their participation in licensing and commercialization activities. The Laboratory received \$554,000 for scientific research and development, technology transfer activities and education programs.

A closer look at D Division

Navigating the information flood

"We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it and make important choices wisely."

—Edward O. Wilson

by Nancy Ambrosiano



A primary objective of the newly named Decision Applications (D) Division is making sense of the information flood to help project officials across the Laboratory make good decisions about their work.

"Our continuing goal is to synthesize critical information, objectively and critically, through the integration of human expertise and intuition, computational methods, and mathematical and analytical techniques," said Division Director Darrell Morgeson.

D Division also is home to projects involving large-scale simulations of human-dominated systems. These include TRANSIMS, a traffic modeling system that is being expanded to simulate disease spread and other issues relating to human mobility, and PREDICT, a 1998 R&D 100 Award winner that predicts complex system performance clients as diverse as the auto industry and the weapons program.

The division, which changed its name from the Technology, Safety and Assessment (TSA) Division last December, also contains nuclear reactor expertise, a lead technology area for the Laboratory, and works on problems related to the complex infrastructure in which most of us live and work.

With approximately half the people on Earth living in large urban areas, Morgeson said, it is apparent that the

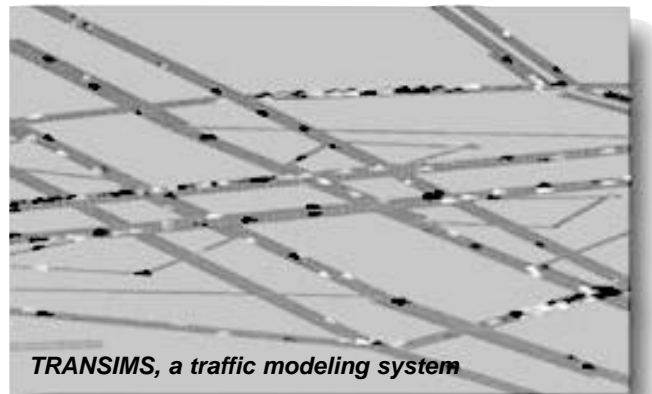
Newsmakers ...

continued from Page 6



Tom Buhl

council serves as a technical advisor on radiation issues to the state Environmental Improvement Board and the state Radiation Protection Program. Buhl has 23 years of health-physics experience and has been a certified health physicist since 1981. He has been chair of the American Board of Physics and is currently treasurer of the American Academy of Health Physics. He also is a member of the Conference of Radiation Control Program Directors as well as the American Physical Society.



concentration of capital and human resources is dependent on small pieces of real estate serviced by a highly complex infrastructure. Analyzing the fast, dense interactions of this infrastructure becomes essential when one considers that tiny problems rapidly spread across these systems.

When a communications satellite failed in 1998, 45 million pagers, 5,400 gas stations and a financial services company were crippled. One thunderstorm between St. Louis and Washington, D.C., strands thousands of passengers, backing up the airline system for days. A screwdriver dropped into piece of power station equipment provided blackouts across the entire western United States. And it is the skills within D Division that can bring order to this chaos.

"Our ability to design, understand and perfect these systems is more important than ever," said Morgeson. "We are here to make those systems more robust. Technology alone is not where decisions are made, we must look at larger scale systems to understand the implications of the decisions, now and in the future."

The division's specialties extend beyond analyses of human transport and the complexities of communications, however. Realizing that nuclear reactors, battlefield power systems and space propulsion are complex systems in and of themselves, there are D Division projects in all of those areas, from designing the actual equipment to developing risk assessments for entire facilities such as the Fissile Materials Storage Facility at Mayak, Russia.

The division, which conducts its work at Technical Areas 3 and 52 and at the Pueblo Complex, has about 250 employees and an annual budget of about \$55 million.

Its eight groups are Statistical Sciences (D-1), Basic and Applied Simulation Science (D-2), Systems Engineering and Integration (D-3), Energy and Environmental Analysis (D-4), Military Systems, Analysis and Simulation (D-5), Technology Modeling and Analysis (D-7), Nuclear Systems Design (D-10) and Risk and Hazard Assessment (D-11).

Getting high on opera

by John A. Webster

Preparing for a leading role in an opera is not for the halfhearted or the lazy. It involves studying the music note by note, translating the libretto word by word, working for months with an acting coach, learning everything you can about the opera's cultural epoch and staging the opera for two weeks, to say nothing of years of voice and stage training.

At least that's what Louise Mendius of Communication Arts and Services (IM-1) has been doing for the past year to get ready to play Cio-Cio-San in

the Opera Southwest production of "Madama Butterfly," which opens March 30 at the KiMo Theater in downtown Albuquerque.

She says the hard work is definitely worth it. "I love opera. There's nothing like the high you get when you give a good performance. You can make people feel the emotion even if they don't understand the language. And besides, it's fun."

Mendius, who grew up in Los Alamos, is a communications planner and writer/editor in IM-1. She has been singing in operas and other musical venues for years.

"I've sung for most of my life," said Mendius, who holds bachelor's and master's degree in voice performance from the University of New Mexico, "and I've performed all over the country, plus in Germany."

Her experience includes a portrayal of Cio-Cio-San about 10 years ago. "I wasn't ready for it," she admits, "but since then the voice has grown up. Ten years ago, I was a light lyric soprano. Now the voice is richer and bigger."

"Madama Butterfly," which was composed by Giacomo Puccini, takes place about 1900 in Nagasaki. It tells the story of a Japanese geisha, Cio-Cio-San, who "marries" an American naval officer, Lt. Benjamin Franklin Pinkerton. They live together in a villa overlooking the city, but then he returns to the sea, while she bears their son and waits for his return.

When Pinkerton returns, he has an American wife. Cio-Cio-San recognizes how differently they each viewed their "marriage," gives her child to Pinkerton and his new wife, and ritually kills herself.

"She's a very complex character," said Mendius. "She's

a teenager, she's a geisha, she's changed her religion, she's the daughter of a samurai and she's separated from her family. You have to resolve all these factors in presenting the character."

The best part about the role for Mendius is the second-act aria "Che tua madre," where Cio-Cio-San talks to her son about her choices in life. "She really grows up," Mendius said. "She becomes a woman at this point."

The hardest part is being on stage for almost the entire opera. Once Cio-Cio-San makes her musically lush entrance in Act I, she hardly ever leaves the stage.

"It's probably one of the most exhausting roles in the soprano literature," Mendius said. "There's no rest. And you're singing probably 90 percent of the opera."

"Madama Butterfly," which will be sung in Italian, will be performed at the KiMo the evenings of March 30, April 5 and April 7 and the afternoon of April 1.

Mendius, who also holds a bachelor's degree in geology and a master's degree in business administration, sings in oratorios and musical comedies, as well as operas. "The fun part is once you learn how to sing operatically, you can sing almost any style there is — country and western, blues, jazz, gospel, anything," she said.

She will be busy with opera in the coming months. In addition to several auditions, she will be performing next year in Wolfgang Amadeus Mozart's "Don Giovanni" in Pensacola, Fla., and Puccini's "Tosca" in both Albuquerque and Pensacola.



Louise Mendius portrays her first Cio-Cio-San in a performance of "Madama Butterfly" in Arkansas about 10 years ago. Photos courtesy of Mendius

Los Alamos News Letter

Mail Stop C177
Los Alamos, NM 87545

Nonprofit Organization
U.S. Postage Paid
Albuquerque, NM
Permit No. 532

LALP-01-4