the laboratory
connection

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your community's link
to information, opportunities, and people
at Los Alamos National Laboratory

April/May 2003

a word from the Community Relations Office

From nuclear weapons to neutrinos, Los Alamos National Laboratory is famous for ideas that have changed the world. In the 60 years since the government located the Manhattan Project on the Pajarito Plateau, the Laboratory has made discoveries and devised technology from its considerable intellectual capital that have revolutionized the way we live and interact with the rest of the world.

The Lab's success in all of its endeavors has been due to the efforts of the people who work here and the support of our neighbors in the region. For them, the past holds memories of both technical achievements and personal sacrifices made by many individuals and families. These sacrifices included those of scientists who left friends and family behind to travel thousands of miles to New Mexico to work on a top-secret project, and those of the Los Alamos homesteaders and others who gave up their land to the government for the war effort.

Northern New Mexico has seen enormous global change since the arrival of the first scientists on the Hill. As the Lab prepares to celebrate its diamond anniversary, we want to recognize not only the ideas and accomplishments that have made us world renowned, but also the individuals, families and communities that nurtured them locally.

Physicist Frank Harlow Looks Back on 50 Years at the Lab

Frank Harlow's paintings decorate the walls of his office in the Theoretical Division. The longest-serving regular Lab employee has also co-authored books on fossils and Pueblo pottery.

When 25-year-old Frank Harlow arrived at Los Alamos National Laboratory in September of 1953, PhD in hand, he needed a badge just to get into town. His Theoretical Division office was located in an old barracks building near Ashley Pond, where he worked on a big IBM 701 computing machine in a huge room filled with cathode ray tubes.

During his 50 years at the Lab, the much-honored theoretical physicist and Lab Fellow who is the longest serving regular employee, saw historic scientific advances and rubbed elbows with Nobel Laureates. He had a poem written for him by Frederick Reines, discussed turbulence with Hans Bethe, and had Murray Gell Mann over for dinner. He witnessed the genesis of fluid dynamics and participated in the computer revolution. He published more than 150 scientific papers and mentored an equal number of students. He and his wife Patricia raised four children, and in his spare time, Harlow became an

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Harlow
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accomplished painter and an expert on Pueblo pottery.

"At 75, as a person looking back on a lifetime and wondering if he made the right choices, I've concluded that I couldn't have done better," he said. "I have seen amazing technology and met wonderful people."

Harlow received his PhD from the University of Washington in Seattle, where he met and married his wife. When the couple arrived on The Hill in 1953, Harlow was coming to his first, and ultimately last, job. In some ways, Los Alamos was a very different place then, but in others it has not changed very much. The Theoretical Division would not move across the bridge for another three years, although there were other research sites already located there. The public library was just east of the post office, and the Safeway grocery store occupied the spot where Daylight Donuts is today. Small as it was, the town had two movie theaters, one where the C.B. Fox store is now located. The Harlows have lived in the same house on 11th Street for more than 40 years.

"I have seen a lot of change in Los Alamos," he said, "but not a large amount of population growth." On the scientific side, the changes have been dramatic. When Harlow started working, scientists had set times, sometimes in the middle of the night, when they would do hands-on running of their problems on the early computers. The IBM punch cards they used stored sections of code and data on each card.

"You might have 150 to 200 cards for a problem and they were in a particular order, of course," he said. "I was always afraid I would drop them and have to sort them out again. It was the state of the art at the time, but now a small laptop has more power."

Harlow was also on the ground floor of another important field at Los Alamos: computer fluid dynamics.

> "I have seen amazing technology and met wonderful people."

"When I first came here I got involved with the study of movement of currents of air or water around obstacles," he said. "Our group fathered much of the early work in computer fluid dynamics."

In recognition of his 50 years in the field, the Japanese Society of Mechanical Engineers named Harlow their Person of the Year in 2001.

Harlow considers some nonscientific changes at the Lab to be as noteworthy as the advances in science.

"I think it's great that they've placed such importance on accountability for safety and security, although that has had its price," he said. "Many people have to spend a lot more of their time keeping track of these issues, and to some extent that has been a problem."

Harlow noted that when he was a group leader from 1959 to 1973, he spent about 10 percent of his time on administrative duties and 90 percent on science.

"Nowadays, a group leader is considered lucky to have 10 percent of his or her time for science," he said.

Another area of change he has witnessed is diversity.

"Diversity has come slowly," he said. "Back in the early days, the scientists' wives would do some scientific calculations, but in more recent times we've seen some really talented women being promoted to positions of great responsibility. We've also been working hard to promote Hispanics and help them get the necessary education for that. There have been three people in my group who came here when they were still citizens of the People's Republic of China who have since become citizens and gotten security clearances. I've also had the opportunity to work with Russian scientists. My philosophy is that when people get to know each other, when we learn about their families and pets, we begin to realize that they are real human beings. These seemingly trivial things are what humanize the world."

Harlow is particularly passionate about his work mentoring students over the years.

"I've had about four students a year – high school seniors, undergraduate and post docs – for 50 years," he said. "I've had the joy of having sixteen young people come here to do their doctoral work with me. One thing I'm particularly proud of is that Rod Linn and I developed a wildfire model together while he was working on his PhD. That was among the most exciting things I have been involved with."

Linn, now a technical staff member in Earth and Environmental Sciences, also has high praise for Harlow.

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Lab Kicks Off Six-Month Celebration of 60th Anniversary

Los Alamos National Laboratory is grateful for the many contributions of its employees during its six decades of national service, and is equally grateful for the support and contributions of the communities where they live. To recognize these contributions and to thank our neighbors, the Lab is making community recognition and appreciation part of its plans to commemorate 60 years in northern New Mexico.

"The 60th anniversary of any important institution is a milestone birthday," said Denny Erickson, co-chair of the 60th Anniversary Committee. "We of course want to reflect on our past accomplishments. And we want to provide recognition to the people who have made the Lab what it is and the communities that have become important partners."

The Lab's 60th Anniversary Task Force is planning and coordinating events that begin in early April and conclude in September. One set of activities is striving, in the spirit of appreciation and recognition, to provide a stronger focus and presence at long-standing community events in the region throughout the late spring and summer.

"The Lab is intentionally planning ways to strengthen its participation in certain community events to express our appreciation and recognition," said Erickson.

A special traveling exhibit featuring employees and multigenerational families from throughout the region is being prepared. Contacts are being made for Lab participation at regional celebrations such as Santa Fe Community Days in May, the Los Alamos Chamberfest in June, the Eight Northern Pueblos Arts and Crafts Fair at San Juan Pueblo in July and Spirit Days in Española in August.

At the Lab, plans call for the celebration to begin early in April with a six-week concentrated period of events. The timing of these events is appropriate because the formal contract between the federal government and the University of California establishing the management responsibility for the Laboratory was signed on April 20, 1943.

A forum is planned featuring past Laboratory directors Harold Agnew, Don Kerr, Sig Hecker and John Browne. Together with current Director Nanos, each will give his view on the principle scientific accomplishments and challenges faced as a Laboratory director. That afternoon, the second annual presentation of the Los Alamos National Laboratory Medal will take place. This year's ceremony will honor Laboratory Senior Fellows George Cowan and Louis Rosen. The following evening, the Los Alamos Historical Society will sponsor a dinner honoring Laboratory directors and their spouses. This dinner, originally scheduled for May 2000, was canceled because of the Cerro Grande Fire. Later that evening, the Laboratory directors will speak at a special forum in the Duane Smith Auditorium in Los Alamos.

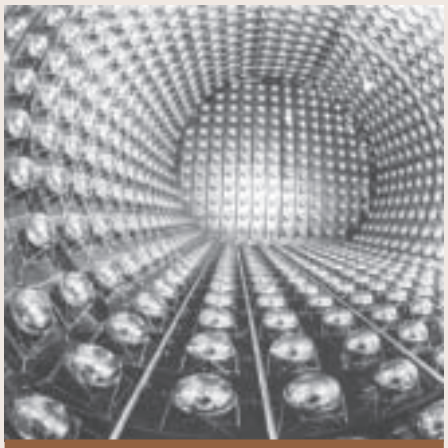
Later in April, the Laboratory and the University of California plan to host an Anniversary Recognition Program. Special guests are expected to include U.S. Senators Pete Domenici and Jeff Bingaman, Congressman Tom Udall, other members of Congress; and state and local officials. Also expected are leaders from the U.S. Department of Energy and the National Nuclear Security Administration as the federal owners and sponsors of the Laboratory. In addition, representatives from the Department of Defense community, renowned scientists and others are expected. The day will feature a formal ceremony and dedications of two major new facilities: the Dual-Axis Radiographic Hydrotest (DARHT) facility and the Nonproliferation and International Security Center (see related story pg. 8)

The spring events will provide special emphasis on science and the future. Numerous lectures, workshops and forums are planned. Theoretical physicist Frank Harlow, the longest serving regular employee of the Lab family, will give the first presentation in a new lecture series entitled the Heritage Lectures. (See story on Frank Harlow, pg. 1) Also planned is a series of presentations organized around the theme "Science-Based Prediction." Of particular public interest should be a special global climate workshop entitled "Water, Drought, and New Mexico." The workshop is a collaborative effort involving several agencies and will be held at the Santa Fe Hilton on April 23.

More information is available on a 60th anniversary Web site at http://int.lanl.gov/news/60th/.

Trucks are inspected at the Main Gate to Los Alamos 60 years ago.

From a MANIAC to Poltergeists and Beyond
60 years of science at Los Alamos



The tank pictured above is filled with materials — including common mineral oil — so that detection devices can help Lab scientists learn more about the elusive subatomic particle known as the neutrino.

Although the Lab has been involved in scientific endeavors since its inception, picking a few to highlight the past 60 years is a daunting task. The examples below merely scratch the surface of the breadth of what the Lab's scientists have produced over the past sixty years.

Subatomic particles and computation have been integral parts of the Lab's history, although supercritical fluids join the Lab's scientific path later in history. The following examples will provide some insight into the Lab's history, but many more stories remain untold.

The neutrino's discovery, theorized more than 70 years ago to explain the disappearance of energy during beta decay, was announced in the publication "Science" in 1956. It was primarily the result of the work of two Los Alamos National Laboratory scientists, Fred Reines and Clyde Cowan, Jr., and their experiments that took place between 1953 and 1956. In 1995, Reines was recognized for the discovery of the neutrino with the Nobel Prize in Physics for his work on the neutrino's detection. The work was dubbed "Project Poltergeist" in reference to the supernatural occurrences that "you suspect are there, but how do you prove it?"

Neutrinos are charge-less, subatomic particles that are produced in reactions involving what is called in physics "the weak force." Neutrinos penetrate materials easily and were thought for some time to be massless.

Neutrinos are important because of the role they play in the creation of the universe, as the driving force in supernova explosions, and in our basic understanding of atomic forces that make up everything around us.

The Lab has continued to help pioneer our understanding of neutrino properties including the discovery that neutrinos have mass and oscillate back and forth to different types as they move through the universe.

Current research, in cooperation with other institutions, delves further into the types and behaviors of the neutrino subatomic particles, including the possible discovery of a fourth type of neutrino. The mysteries of the neutrino have yet to be completely understood, but the Lab continues in the discovery process.

For its first dozen years or so, the Laboratory was primarily concerned with nuclear weapons. It was Norris Bradbury, the second director of the Lab, who realized that the Lab needed to have a broad science base — not just one concentrated on nuclear weapons. To further that goal and help keep pace with other research laboratories the Los Alamos Meson Physics Facility (LAMPF) came on line in 1972 after roughly 10 years of work.

The facility was conceived not only as a way to explore particle physics as it pertains to nuclear weapons but also to allow other researchers access to unbound pions, a short-lived subatomic particle produced by the use of a high-power proton beam. Natural byproducts of this production are neutrinos that fit well into other ongoing Lab research. These and other particles produced through the decay process provided an avenue to help understand the forces that hold our universe together and break it apart. The LAMPF facility provided not only the means to help scientists better understand the forces behind nuclear-weapons physics but also an avenue to better understand the properties of materials from metals to atoms.

Over time the facility's mission has changed to the production of neutrons in response to scientific needs, and in 1995 the facility's name change — Los Alamos Neutron Science Center (LANSCE) reflected that new direction. Twenty-five years later, the facility still assists with the Lab's mission and research objectives from around the world.

Today the LANSCE site consists of a dedicated proton-radiography facility to assist in the study of explosive processes, the Lujan Neutron Scattering Center to assist in condensed-matter physics, including material science and biology, and the Weapons Neutron Research Facility for research in nuclear science and for irradiation testing. In addition, an Isotope Production Facility is currently under construction that will produce radioisotopes for medicine and industry.

In the earliest days of Los Alamos, slide rules and adding machines were how complex calculations were made. As the work continued on the first atomic weapons, the need for improved computational capabilities increased. As calculators and then computers were developed, they were adopted by Lab personnel. At one point, there was some doubt that IBM punch-card machines could be better than the calculators being used, but in a head-to-head test, the computer did not tire as the human counterparts did. From then on, computers would become an integral part

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From a MANIAC to Poltergeists continued from page 4

of the Lab's scientific operations. The first electronic, digital computer ENIAC (Electronic Numerical Integrator and Computer) was in working order in February 1946 and could perform up to 5,000 additions per second. Unfortunately, it was completed too late to help with the war effort but a consultant working at both the Lab and the Aberdeen Proving Grounds where ENIAC was developed brought news of the machine.

That information led to the development of the Lab's MANIAC (Mathematical and Numerical Integrator and Computer) in 1952. In 1956 to 1977 MANIAC II, also named 1961 Stretch, was capable of 250 computations in a week and was built over a five-year period. A MANIAC III followed that.

Just last year the Lab dedicated the Super Computing Center as the Metropolis Center after Nick Metropolis who, along with Edward Teller saw the match between computer capabilities and the types of numerical challenges the Lab faced. The facility will house the Q machine that is capable of 30-teraOPS (or 30 trillion operations per second).

The computing power at the Lab continues to grow. The challenge today is to take decades of nuclear weapons test information and use it to simulate nuclear weapons tests in the absence of other testing methods. In addition to supporting the weapons program, the capabilities that have developed here over time have helped with fundamental science questions as well as serving as a critical information storage and retrieval point for programs such as the

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Thousands Turned Out in Los Alamos for JFK Visit

Los Alamos has long been famous as the birthplace of the nuclear age. But more than just that single event has made residents and visitors alike regard Los Alamos as a special place.

On December 7, 1962, President John F. Kennedy flew into Los Alamos in a fleet of presidential helicopters that landed in front of Wing 9 at the Chemical and Metallurgy Building. Vice President Lyndon Johnson and New Mexico Congressman Joseph Montoya accompanied him.

"It was one of those special kind of days that makes you glad you live in New Mexico; bright, sunny, incredibly clear and crisp," wrote Barbara Storms, then-editor of the LASL News. "From early morning you could feel the excitement mounting as swarms of people poured into town from all over northern New Mexico to crowd the freshly-swept streets; schools and businesses closed."

President Kennedy had come to review project Rover, a technology designed and developed by the Laboratory that tested the feasibility of using atomic energy to power rockets. He met with the project's scientists and offered them praise and encouragement. After receiving an explanation of remote handling, he even tried his hand at the manipulators.

President Kennedy smiles at the cheering crowds on his way to Sullivan Field.

Police estimated that between 5,500 and 6,000 people jammed the bleachers and the open area at Sullivan Field. In his address, the President offered praise to the entire community.

"There is no group of people in this country whose record over the last 20 years has been more pre-eminent in the service of their country than all of you here in this small community in New Mexico," Kennedy said. "We want to express our thanks to you. It is not merely what was done during the days of the second war, but what has been done since then, not only in developing weapons of destruction, which by irony of fate, help maintain the peace and freedom, but also in medicine and space and all other related fields."

"Therefore, I am proud, as President of the United States, to come here today and express our thanks to you. And to also tell you how much I have admired...the kind of schools that you run here and the kind of boys and girls that you are bringing up. We hope from them the same kind of service that you have rendered. Thanks to you all."

On Nov. 22, 1963, President Kennedy was assassinated while riding in a motorcade in Dallas, Texas. As the nation joined in mourning, dignitaries from around the world gathered in Washington at his funeral to pay their respects. Mayor Willy Brandt of West Berlin expressed the sense of loss when he said that "a flame went out for all those who had hoped for a just peace and a better life."

The intersection of 15th and Central in downtown Los Alamos, at right in 1950, and above, the Community Bank Building that occupies the corner today.

Legendary jazz bandleader Duke Ellington played Los Alamos in March, 1949. Pictured are, left to right, Earl Sullivan, from the Atomic Energy Commission, Ellington and alto saxophone master Johnny Hodges. Above right, New Orleans blues great Walter "Wolfman" Washington and the Roadmasters played in a downtown Los Alamos parking lot 50 years later. Pictured are, left to right, saxman Tom Fitzpatrick, Washington and bassman Jack Cruz.

LA Floats: A parade on Central Avenue in 1940. At right, the Living Treasures float from last year's Los Alamos County Rodeo Parade.

CB Fox and Sew Enchanted occupy some of this space today. Below, the building once housed the Hill Theater, which was showing a Jimmy Stewart movie in May of 1952.

Right, Senator Clinton P. Anderson, second from the right, and his party arrived at Los Alamos Airport on Carco Air Service in this undated photo. Above right, former President Bill Clinton visited Los Alamos twice and arrived by helicopter.

Above, The Los Alamos Police Station in the early 1950s, left, the same shot in 1999.

Above, the old Los Alamos Post Office in 1949, and here, the Los Alamos Post Office today.

Roybal Family Has Strong Los Alamos Connection

Shirley Roybal's family has been in Los Alamos for four generations. Family members have not only worked at the Lab but were among the area's homesteaders, improving the land before it was selected as the home of the Manhattan Project.

Roybal has worked at the Lab since 1985. Her grandparents were homesteaders and her father, Juan Herrera, worked for the Zia Company and retired after 34 years of service. Her daughter, Kimberly Roybal-Miranda, works for the Lab's Cerro Grande Rehabilitation Project.

"My grandparents started homesteading here in the early 1930s," Roybal said. "They raised some cows, horses, chickens and also crops, which they sold in the Valley and in Santa Fe. They were completely self-sufficient."

Roybal said her grandparents, Norberto and Sophia, regretted letting their land go when asked to do so by the government. But they agreed for two reasons: they were patriotic and, like the other homesteaders, they hoped to get their land back after the war.

"My grandparents spoke only Spanish," Roybal said." My mother was 16 or 17 years old and she remembers two men coming to the door and asking them to sign over the land." One was in a military suit and one was in a dress suit. My grandparents had three sons in the military at the time."

Roybal said that when her uncles returned from the war and discovered that the land was no longer theirs, they went to California to find jobs.

Roybal, who works for the Protocol Office as a Public Relations Specialist, is one of that office's representatives assigned to the help with the Laboratory's 60th Anniversary activities.

"I'm proud to work here and I am grateful to the Laboratory," Roybal said. "We just want to emphasize that the relationship between the Lab and the local communities has been mutually beneficial and needs to continue to be so."

Roybal, a member of the Pajarito Plateau Homesteaders, Inc. group, holds out hope that her family and the rest of the homesteader families will get their ancestral lands back.

Shirley Roybal holds a photograph of her grandparents, Norberto and Sophia Roybal. They were homesteaders on the Pajarito Plateau before the Manhattan Project.

Nonproliferation and International Security Center Completed

On the occasion of its tenth anniversary and the Lab's 60th, the Nonproliferation and International Security Division (NIS) will dedicate its new building with the help of its Congressional Delegation. NIS has produced a wealth of ideas that change the world.

In 1993, the Lab created the division as a response to changing perspectives on how best to meet evolving national security challenges. The end of the Cold War brought with it new concerns about "loose nukes," regional instabilities, and the proliferation of weapons of mass destruction and the means to deliver them.

NIS was formed by the merger of three existing divisions —the Nuclear Division, International Technology Division, and the Space Sciences and Technology Division— for the purpose of detecting, deterring and responding to the proliferation of technology, material, and capability associated with weapons of mass destruction. Because NIS was born of three separate organizations, its staff and resources were distributed across several technical areas and dozens of buildings at Los Alamos. In the years since its creation, NIS has continued to grow, absorbing more people and more responsibilities, and experiencing yet more need for a facility that can better support and integrate its activities.

Thus, the Nonproliferation and International Security Center was proposed to consolidate a major part of NIS Division activities and personnel into a new facility. Much of the treaty verification, nuclear safeguards, nonproliferation, and weapons assessment functions of NIS Division will now be conducted in the NIS Center.

The 164,000-square-foot facility will house more than 400 people in spaces designed for technical and administrative offices, light laboratories, light manufacturing, special security, and support activities. The laboratories have been designed for physics, electronics, optics, instrumentation development, and intelligence support.

Renowned Martinez Family Marks Decades of Service

Five generations of Gerald Martinez's family have done work for the Lab and worked at the Lab in different capacities. It began with his great grandparents, Maria and Julian Martinez.

"In 1907 under the direction of Dr. Edgar Hewett, an archaeologist, my great grandparents began excavations of prehistoric Pueblo sites on the Pajarito Plateau," Gerald Martinez explained. "Local Native American men were hired as diggers and Julian was one of them."

Gerald went on to say that during the 1908 excavations, Maria was at the campsite and saw the pottery shards that had been uncovered by the archaeologists. She showed great interest in the ancient decorated (avanyu) pottery fragments. Dr. Hewett encouraged her to try to reproduce, as nearly as she could, the decorated polychrome pottery of the prehistoric inhabitants. She became internationally famous for her pottery, which is prized by collectors and museums throughout North America and Europe.

Julian and Maria also hosted conferences and official visits for the Lab scientists at the old Otowi House at the bottom of the hill. They enlisted the help of the next generation, Adam and Santana Martinez (the fourth), for these visits. Adam and Santana are Gerald's grandparents.

"Adam also worked for, and retired from, the Zia Company. Santana was a housekeeper for a Lab scientist's family in Los Alamos," Gerald said.

Gerald's father, Edward, worked in the micrographic section of ISD-9. This group is now IM-9. He retired from the Lab after 41 years of service. Gerald's mother, Virginia, also was a housekeeper for a Lab scientist's family.

Gerald S. Martinez works in community involvement and development for the Risk Reduction and Environmental Stewardship, Ecology Group (RRES-ECO) on the Cultural Resources Management Team. He has worked at the Lab for 29 years. He is also a San Ildefonso Pueblo councilman.

The fifth generation member is Nicholas O. Martinez, Gerald's son. He has worked at the Lab for two years. He attends Haskell Indian Nations University in Lawrence, Kansas, and works as a summer student for RRES division in the Water Quality and Hydrology group.

"We've lived in this area for hundreds of years and have worked with the Lab since the beginning," Gerald said. "We can continue to work together while preserving our culture."

Pictured left to right: Nicholas O. Martinez, Edward Martinez and Gerald S. Martinez. All three generations work or have worked at the Laboratory.

Maria Martinez polishes a piece of pottery while her husband, Julian, paints designs on another. They are the first of the five generations of Gerald Martinez's family to have worked on projects for the Laboratory.

From a **MANIAC** to Poltergeists
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Human Genome Project and for AIDS research.

Although the Lab has made discoveries that have altered the way science looks at nature, some of the applications developed here are a little more down to earth.

Take dry cleaning for example. Traditional methods use chemicals that—although they don't harm the materials being cleaned—are not environmentally or worker friendly. Lab scientists began back in 1992 to develop a way to use pressurized carbon dioxide (CO_2), what most people recognize as dry ice in a solid form, to act as a solvent. Not only is the method environmentally friendly because CO_2 is naturally occurring in the air, but the technology reuses the gas as it changes back and forth under pressure so that the only waste product is the actual dirt removed from the clothes. It is safer, and more efficient - taking only half the time of a regular dry-cleaning process. It's also easier on clothes.

The Lab has an agreement with Raytheon to market the technology and along with the company's collaborators plans to eventually produce 4,000 machines a year using the DryWash™ process for use worldwide.

Dry cleaning isn't the only application for this supercritical fluid research: SCORR (short for supercritical CO_2 resist remover) recently won an R&D [Research and Development] award for a process that uses carbon dioxide to remove residues and particles from integrated circuits more effectively than previous processes. Because the supercritical fluid acts more like a gas than a liquid it can get into even tinier spaces in and on the chips helping the integrated circuit industry pursue its high-speed performance goals by fitting more on each chip than previously possible.

Two Generations of Hsu's Contribute to Lab Mission

In 1942 when Los Alamos was selected as the Manhattan Project Site, the best scientists were recruited from Europe and the large, predominantly eastern cities in the United States. The majority of the scientists were male. Diversity existed mainly in their native languages, although all spoke English.

Since then, the Lab has worked at broadening the diversity of its staff to include women and minorities. Recruiters now seek the best scientists from many cultures and countries. And, in an effort to produce more local New Mexican scientists, the Lab has helped to improve math and science at the elementary and middle school level and has shared its technical expertise throughout the region. Many of the Lab's current scientists grew up in Los Alamos.

Two generations of the Hsu family have lived in Los Alamos and worked at the Laboratory. Today, Albert Hsu is an electrical engineer in the Dynamic Experimentation division for the Test Engineering group. He and his sister Lily grew up in Los Alamos and he had always wanted to work for the Lab.

"My parents both worked for the Lab and really enjoyed it," Hsu said.

In 1985, Albert Hsu started working as a student in the Lab's Undergraduate Student program. After receiving his degree in electrical engineering from New Mexico State University in 1988, he became a Graduate Research Assistant . He became a staff member in 1991.

Lily Hsu also worked in the Life Science Division at the Lab during 1987–1988 as an undergraduate student. She currently lives in Los Angeles.

Pictured left to right: Hsiao-Hua and his wife Florence sit with daughter-in-law, Melissa Douglas, and their son, Albert Hsu. Two generations of the Hsu family have worked at the Laboratory.

Albert and Lily Hsu's father, Hsiao-Hua Hsu, is a nuclear physicist who began working at the Lab in 1978. He had served as a staff member in the Advance Nuclear Technology Group, the Diagnostic Physics Group, and the Fast Transient Plasma Measurement Group. In 2001, after 23 years at the Lab, he retired from the Health Physics Measurement Group.

Florence Hsu, mother of Albert and Lily Hsu, worked as a classified document custodian in the Engineering Sciences and Applications division for the Weapons Engineering group . She also retired from the Lab in 2001 after 17 years of service.

Albert Hsu's wife, Melissa Douglas, is a plasma physicist in the Lab's Applied Physics division, working in the Thermonuclear Applications Group. She has been working with the Lab for one year after having worked at Sandia National Labs for 7 years.

Albert said that he and his wife enjoy working at the Lab.

"We both have challenging, interesting jobs and we look forward to continuing to support the Lab in its scientific mission," he said.

All of Hsu's family members support strongly the Lab's student programs, calling them the best way to attract the next generation of Lab workers. They said they hope to see more Asian families working for the Lab in the future.

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Pajarito Plateau Homesteaders Hope to Reclaim Land

Above is a homestead circa 1936. At right are members of the Pajarito Plateau Homesteaders Association, Inc., on their annual visit to their ancestral lands. More than 30 families had established homesteads on the Pajarito Plateau in the early 1930s. When the area was selected as the Manhattan Project site in 1942, the homesteaders relinquished their land for the war effort. The Pajarito Plateau Homesteaders Association and its president, Joe Gutierrez, continue to work to reclaim their ancestors' lands.

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"Frank is a great mentor and a wonderful friend," he said. "He has helped many students gain confidence in their abilities and has incredible vision for ways to get a solution to hard problems. He always conveys the message that it is ok to take science somewhere no one else has gone. As he has demonstrated many times, trying new and risky science often leads to enormous advances."

Harlow said he has only one regret among his mentoring successes.

"There are still very few American Indians in science, and I have always wanted to guide an American Indian student through a PhD degree," he said. " I have known Navajo Lab physicist Fred Begay for years and we have had many interesting conversations, and I have many friends in the American Indian community, but none of them has come to work with me for graduate studies."

Some of Harlow's many Indian friends are people he has met in connection with one of his hobbies, the study of Pueblo pottery. Over the past 30 years he has authored a series of books on the distinctive characteristics of pottery made at the New Mexico Pueblos. His book on Zia Pueblo pottery, coauthored by Dwight Lanmon, will be out this summer, with all author's royalties donated to the Pueblo. He is also a fossil enthusiast and has written a book on that subject, coauthored by Patrick Sutherland.

In the course of drawing the pottery designs for his books, Harlow became interested in painting pictures. Since he began painting in 1968, he has had his work shown in several art galleries, including a one-man show in Santa Fe. He has sold some 250 works, most with American Indian subjects, but his current work is not for sale.

"I just paint for the delight of it," he said. "It's a special kind of relaxation for me."

Harlow is so taken with northern New Mexico that he has not travelled farther than Albuquerque since 1963.

"I traveled to the Marshall Islands for one of the early bomb tests," he said. "And I went to Chicago, so I thought I had seen the world. I love it here. There are so many interesting things to study."

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1943 - 2003

Los Alamos NATIONAL LABORATORY

Ideas That Change the World

A distinctive new Lab logo commemorating its 60th anniversary will be showing up on posters, letterheads and other official documents at the Laboratory, and on merchandise at the Lab's Logo Store. The logo was designed by Andrea Gaskey of the Communications Arts and Services group and the slogan, "Ideas That Change The World," from Jas Mercer-Smith of Thermonuclear Applications group, was selected from more than 100 entries in a contest sponsored by the Lab's 60th Anniversary Task Force.

In choosing the slogan, Interim Lab Director Pete Nanos said the winning entry "best reflected the intent of our upcoming commemoration." Mercer-Smith received a $100 check, which he donated to the Los Alamos Employees Scholarship Fund.

The Laboratory's Logo Store, located in the Otowi Building next to the cafeteria, will offer sweat shirts, T-shirts, and coffee mugs with the 60th logo. All profits from sales at the Lab Logo Store benefit the Math and Science Academy.

Inside

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