Reflections

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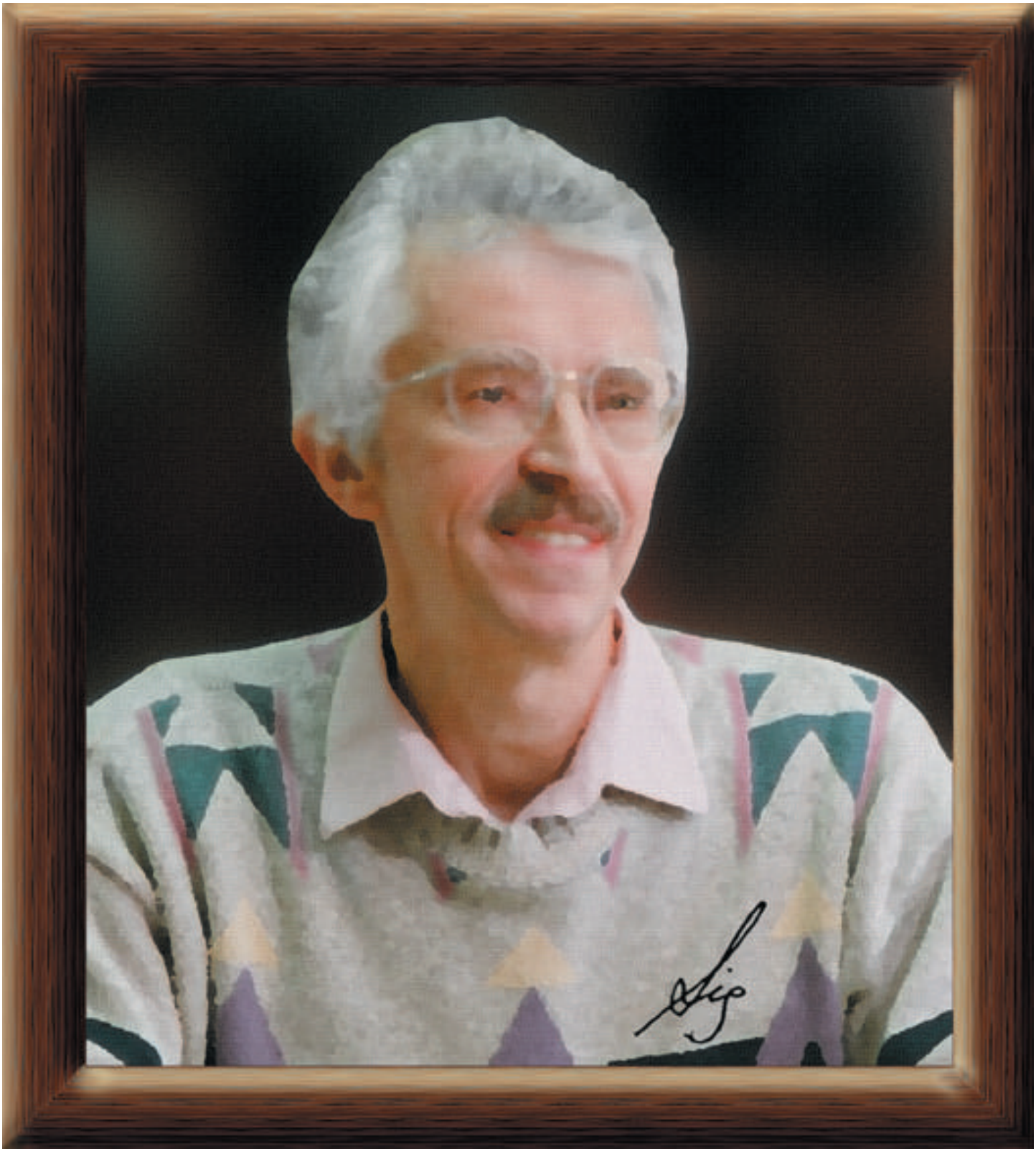

Siegfried S. Hecker, Los Alamos National Laboratory Director, 1986-1997

Inside this issue ...

Cover by Fred Rick and Edwin Vigil

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Reflections

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editor's journal

Thanks for the memories

This special August/September issue of "Reflections" is dedicated to Laboratory Director Siegfried S. Hecker, who is stepping down from his position Oct. 2.

Sig, as he likes to be called, has been the Laboratory's director since 1986 — second in length of tenure only to Norris Bradbury, who followed J. Robert Oppenheimer as director. Sig announced his decision to step down as director last September. During his directorship, the Laboratory has seen changes unlike any since its inception. Chief among these changes were the end of the Cold War and the subsequent refocusing of the Lab's mission. These past several years have been challenging times for the Laboratory and the director, but both seem to have met the challenges head on, growing and learning along the way.

In this issue, we have attempted to provide some insight into the man who has led the Lab for more than 11 years. Through photos, recollections, comments and quips from family, friends and colleagues, we reveal some of the different sides of Sig. You'll meet Sig the scientist, national laboratory leader, devoted family man, "extreme" athlete and friend.

Since his arrival in this country as a 13-year-old Austrian immigrant, Sig has come to know many people from all walks of life. And some of these individuals have joined us in preparing this special issue. We thank those who shared their photos, thoughts and time to make it possible. And we especially thank those who helped keep the special issue a secret from Sig during its preparation.

For the "Reflections" staff, conceiving and preparing this special issue was our way of saying thank you to the director for his support and encouragement and for his efforts through the years on behalf of the Lab. I personally will miss the cooperation the Employee Communications Team has received from Sig and his staff, especially Buck Thompson, special assistant to the director. On more than one occasion, they helped us get important information out to employees in a timely fashion.

While Sig sometimes cut it pretty close getting his Newsbulletin column (the Inside Story) to us by deadline, he always treated the Employee Communications staff with professional respect, allowing us to do what we were hired to do without second guessing or imposing his will. For that, I say, "Thank you."

And I would be extremely remiss if I did not publicly thank Sig for his unswerving support of the new electronic Daily Newsbulletin over the past several months. He has been an outspoken champion of this electronic news vehicle, primarily because it provides a means of getting more information out to employees more quickly than ever before and because it helps connect our workforce with the vast informational resources of the World Wide Web.

So on behalf of the Employee Communications Team, I wish Sig a satisfying and rewarding life-after-director. And as entertainer Bob Hope would say, "Thanks for the memories."

The Inside Story

Since becoming director, Sig Hecker has reported to employees at least once a month in a column published in the Newsbulletin as The Inside Story. Here is a sampling from past Inside Stories.

Speaking to the media

"We cannot overemphasize the need for strong and stable support of nuclear weapons technology."

—Nov. 20, 1987

"Students provide us with an important link to the academic world. They are also our link to the future. They bring a fresh point of view and a youthful enthusiasm unspoiled by bureaucracy."

—April 29, 1988

"I am a firm believer that regular exercise and a proper diet lead to healthier and more productive employees. … I hope to see you out on the trails some lunchtime."

—May 19, 1989

"The DOE and its laboratories should go beyond the usual concept of technology transfer and add industrial competitiveness to their present missions of defense, energy and research."

—July 21, 1989

Speaking to employees

"The University [of California] is one of the world's finest research universities. … Being operated by an institution steeped in excellence brings out the best in the Laboratory."

—Nov. 17, 1989

"Strength through diversity is an issue of institutional survival. It is projected that 85 percent of the new U.S. work force this decade will be women, minorities and immigrants. The projected decline in majority males majoring in science and engineering in school will make it imperative to bring more women and minorities into our scientific work force."

—Oct. 26, 1990

"The Tiger Team raised very important issues, … [It] raised our awareness of the importance of protecting the environment."

—Nov. 15, 1991

"Professor Avrorin presented the Laboratory with a memento that is a piece of a dismantled Russian nuclear weapon that was on alert on an SS-11 missile. The memento has the inscription 'From Russia with love.' How the world has changed indeed."

—April 23, 1993

" … I view our quality journey as a radical change for the way we function at the Laboratory. The reorganization, principally the flattening of the structure, was a necessary but not sufficient change. Empowering our people will constitute the most radical change."

—July 23, 1993

" … reducing the nuclear danger will be a compelling central mission for Los Alamos for the foreseeable future."

—June 10, 1994

"The tactical goals … are institutional goals. They … will allow us to focus our institutional activities in those areas deemed critical to our strategic vision and missions."

—Nov. 18, 1994

"I believe that the Manhattan Project shaped the world in a positive way. It helped end quickly a most cruel war. J. Robert Oppenheimer said, 'The atomic bomb was the turn of the screw. It has made the prospect of future war unendurable.' He was right."

—July 21, 1995

"[The president's decision to seek a 'zero' yield comprehensive test ban treaty means we can] turn our full attention to developing the new paradigm of science-based stockpile stewardship. … This is a big assignment, but one we understand and accept."

—Aug. 18, 1995

"Let me stress that no operation shall be performed unless it can be done safely. I don't care about time pressures. I don't care what other excuses we may have. We must do operations safely — that must come first."

—July 19, 1996

"We are most fortunate to be able to explore the frontiers of science at a place that is so rich in culture and history. This agreement with Santa Clara Pueblo, along with the agreements with the other three pueblos, will provide for greater understanding and cooperation between the Laboratory and the neighboring Indian tribes."

—Dec. 24, 1996

" … the directorship of the Los Alamos National Laboratory is at once one of the most rewarding and one of the most frustrating jobs in the nation."

—April 24, 1997

The *Real* Inside Story

by William "Buck" Thompson, special assistant to the director

One of Sig's first actions after he become director was to present a colloquium for employees. Sig typically cuts things pretty close (very close, in fact) — a characteristic that allows him to make good use of his time, but it keeps his staff nervous. On this occasion, he left his office to get to the auditorium a couple of minutes before the start of the colloquium, but when he arrived, the fire marshal told him he couldn't go in. He had closed the auditorium because it was already full since everyone wanted to hear the new director. But Sig managed to convince the fire marshal that he was in fact the person the crowd was waiting to hear.

Communicating with employees has been a priority for Sig, and another channel has been his regular Newsbulletin column, the Inside Story, which gives his perspective on important or interesting topics. He started the Inside Story the first month he became director, and he has not missed a single month.

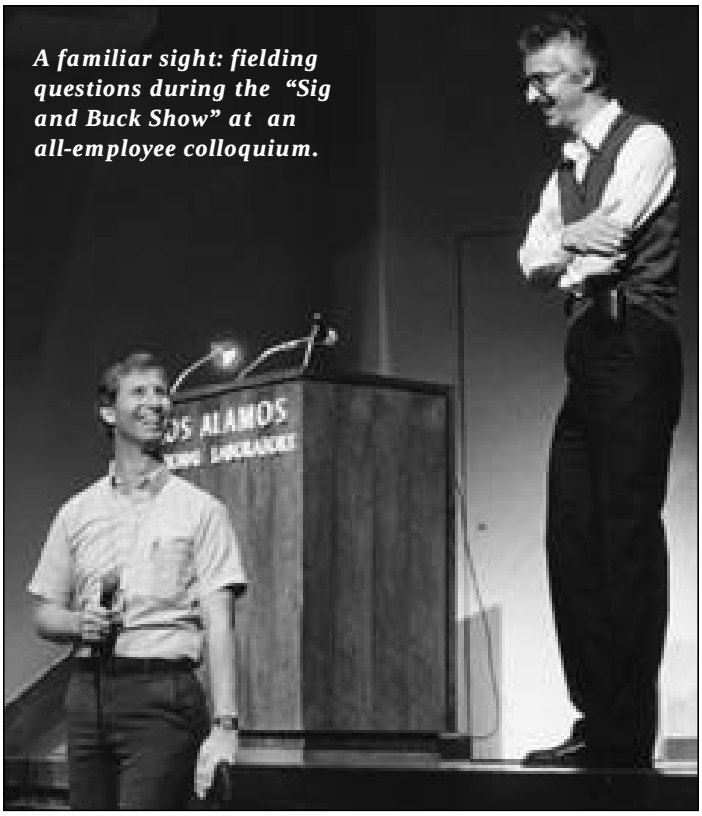
What I want to do is tell the *real* inside story — my observations of Sig over the past 12 years. It is not meant to be a tribute, but an insight. But as it turns out, an insight into Sig is in fact a tribute to him.

Sig has strong feelings; he is very passionate about some things — his family, the Laboratory, science, Northern New Mexico, skiing. He will talk about these passions with anyone who will listen — visitors to the Lab, people in the neighboring communities, employees, colleagues and people he meets when he is away from the Lab.

He loves to talk, and when it comes to the Lab, its science and its people, he knows what he's talking about. He knows an incredible amount of detail about the science at the Lab. What's more, he understands those details and remembers them. His memory is phenomenal (and gets me into trouble all the time since my memory doesn't come close to his). At a moment's notice, he can remember the details of what he told a visitor four years ago, including the date, the weather at the time and the visitor's response. In fact, more than one division director has told me that Sig knows more people in the division than the division director.

Sig enjoys hearing about new scientific developments, but he really enjoys people who are excited and enthusiastic about what they do — whether it's a new scientific breakthrough, a more efficient way to provide services at the Lab or whatever. He especially enjoys talking with students because they are usually excited about something and have novel ideas.

Sig is one of the hardest working persons I've known. How he does all he does, I still haven't figured out — but you can bet he doesn't watch as much TV as some of the rest of us. For his first few years as director, his normal workday was 6:30 a.m. until 6 p.m. with a noon-hour jog. But he's found that he needs to take advantage of the noon hour to get more time to meet and interact with people. So his workday now is 7 a.m. until 6 p.m., including working through the noon hour. But by the time he gets to the office, he's already spent an hour on a 10-mile mountain bike ride or other form of strenuous exercise.



A familiar sight: fielding questions during the "Sig and Buck Show" at an all-employee colloquium.

Sig's intensity and dedication to the Lab are apparent when he travels. He typically catches the last flights of the day (both from and to Los Alamos) so he won't miss many working hours. It's typical for him to get to Washington at midnight and have a 7 a.m. breakfast with someone. It's not uncommon when I get to the office to find e-mail from Sig that he sent from an airport or a hotel at 2 or 3 a.m. He has found e-mail to be a very effective tool, especially when traveling. He types up some new ideas and sends them to us back in the office when he gets off the plane and can find a phone to download his computer. Now, with more and more phones on planes, plus the use of cell phones, there's no way to get away from him.

Sig's tenure as director has spanned a challenging time, which included the end of the Cold War, significantly increased external oversight and regulation, and the external pressure for increased productivity. He has led the Lab through this period, firmly establishing its missions and national role. His understanding of science, programs and capabilities, combined with his clear insight and vision, have allowed him to play a significant role in shaping important national and Laboratory programs such as science-based stockpile stewardship, Russian collaborations, computer modeling and simulation, neutron science, and industrial partnerships.

Most of what Sig is today is what he was before he became director, and those qualities will continue after he steps down and returns to research on the science of plutonium: a person of great integrity, intensity, enthusiasm and optimism; a person who cares for and enjoys people and the Laboratory. Everyone around him is inspired to work hard because of his or her admiration for him and his characteristics. It's been more than an experience; it's been a privilege.

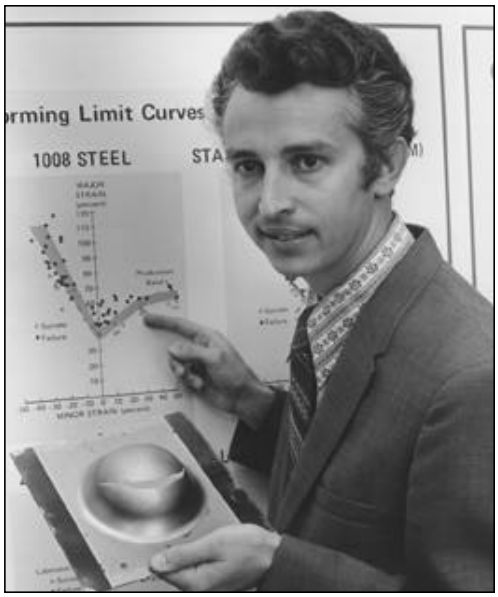
Milestones

1956: ***immigrating to the United States. Thirteen-year-old Sig, left, prepares to leave Europe for the United States with his family.***

1983: ***deputy leader of the Materials Science and Technology Division***

1985: celebrating his selection as director with Nancy Morrison, left, and Stella Taylor

1965: ***graduating from Case Western Reserve University in Cleveland with a bachelor's degree in metallurgy, flanked by mother, Maria Mayerhofer, and stepfather, Robert Mayerhofer***



Early 1970s: ***a senior research metallurgist for General Motors Research Laboratories***

1994: ***signing a collaborative research agreement with Vladimir Belugin, director of Arzamas-16 in Russia***

Highlights during Sig's years at the Laboratory

1965 Sig arrives at Lab as summer graduate student.

The Phoebus 1-A Rover reactor is tested at full power.

1966 The nation's first nuclear safeguards program begins at the Laboratory.

The Lab is designated a Registered National Historic Landmark.

1968 Sig receives doctoral degree; returns to Lab as postdoc.

1969 Research and development begin on radioisotope thermoelectric generators to provide power to spacecraft.

1970 Harold Agnew becomes the third director of the Lab.

1972 The Clinton P. Anderson Meson Physics Facility (LAMPF) is completed.

1973 Sig joins Lab permanently as staff member in the Physical Metallurgy Group.

Lab-designed instruments aboard Vela satellites discover gamma-ray bursts.

1974 The first radioisotopes produced at LAMPF for medical research are shipped.

1976 The Cray-1 is delivered to the Laboratory.

Meeting and greeting ... and representing all of us

Hosting Sen. Pete Domenici, center, and former Energy Secretary James Watkins, left, on a whirlwind tour of the Lab in 1990

"When Sig Hecker took the helm as director of Los Alamos National Laboratory in 1986, there were tens of thousands of missiles housed in silos across the Soviet Union pointed at the United States. Today a piece of one of those missiles is in the Los Alamos museum — a gift from Russia and a powerful symbol of the dramatic and unforeseen changes the world has seen during Sig's extraordinary career. I consider myself fortunate to have been able to work with Sig Hecker during this historic era. Sig has been insightful and resourceful in guiding the Lab as its missions were changed and broadened to fit the new realities of a post-Cold-War world. Sig's influence has been significant. He was instrumental in opening the Russian nuclear weapons cities to the outside world. He presided over nonproliferation efforts. He has played a pivotal role in defining Lab programs that protect the integrity of the nation's stockpile without nuclear testing."

—Pete Domenici, U.S. senator from New Mexico

Sig and Energy Secretary Federico Peña in 1997

"Sig holds himself and everyone around him to high standards. I particularly marvel at his self-discipline and his exercise and diet regime. I also admire his personal commitment to education, and I was very impressed with the personal contribution he and his wife made to the endowment fund of Northern New Mexico Community College."

—Jeff Bingaman, U.S. senator from New Mexico

Sig and Sen. Jeff Bingaman

"I can only speak of Sig in the superlative sense to describe his magnificent feats. His success in the administration of our national laboratory in Los Alamos is one of the reasons why the federal government extended our management agreement. He is world renowned, and UC is proud of the fact that he was a part of us. I wish Sig and Nina the best of health and happiness and continued success in the future."

—Leo S. Kolligian, University of California Board of Regents

Showing President Clinton what the Lab can do during a 1993 visit

"One of the highlights of my tenure as president of the University of California was the opportunity to work closely with Sig Hecker. I was immediately impressed by his commitment to the Laboratory. I had set a goal of strengthening the relationship among the national labs and the university, and I found that I could always rely on Sig for advice and support. He is genuinely dedicated to the Laboratory's mission and its work — a true professional who understands and treasures the special relationship of Los Alamos to the University of California. We owe a debt of gratitude to Sig Hecker, and I wish him and Nina all the best in the years ahead."

—J.W. Peltason, president emeritus, University of California

"Throughout his distinguished tenure as director, Sig Hecker has served the nation and the Laboratory he loves so well with dedication and distinction. He has provided leadership of the highest order, advancing the cause of the Laboratory throughout the country. Under Sig's outstanding stewardship, Los Alamos National Laboratory has achieved tremendous acclaim as one of the world's premier research institutions. It is the epitome of a thriving, modern research enterprise, and Sig Hecker will be linked forever with its stellar scientific, engineering and technological achievements and reputation. His integrity, his notable national and international contributions to the scientific community and his deep concern for the welfare of the Laboratory have earned him a distinguished place in the histories of the Los Alamos National Laboratory and the University of California."

Welcoming Santa Clara Pueblo Gov. Gilbert Tafoya

—Richard C. Atkinson, president, University of California

Greeting former Energy Secretary Hazel O'Leary at the airport in 1993

"My wife says that I am not happy unless I am up to my armpits in alligators. Working with Sig over the past 12 years has allowed me to set standards in this area that I never thought possible. I wouldn't have missed it for the world."

—Jim Jackson, deputy director, Los Alamos National Laboratory

Reflections

"Sig Hecker is the best triathlete of all the lab directors I know — and Sig Hecker is the best lab director of all the triathletes I know."

—Victor Reis, assistant secretary for Defense Programs, Department of Energy

Sig and Vic Reis, DOE assistant secretary for Defense Programs

"You will be sorely missed by all who know you — and by many, many more who did not have that good fortune. Space here does not permit me to recount your many kindnesses to me — far beyond your professional duties!

"I will mention but one item, which stands out so vividly in my recollection. As one of the 'alumni' of the World War II 509th Composite Group (Colonel Paul Tibbets' Atomic Bomb Group), we were privileged to be officially invited by you to spend part of our 50th reunion at Los Alamos. Your graciousness as our official 'host' will never be forgotten. You really made our reunion something to be remembered — as one of the aging 'airmen' I salute you! Your leadership contribution to the University of California, to the nation, indeed to the entire world, through Los Alamos National Lab will never be forgotten or matched! May your future years be satisfying and productive — I know they will!"

—Clair W. Burgener, University of California Board of Regents

Sig and the University of California Board of Regents Oversight Committee

"I am Sig Hecker's No. 1 fan. Sig has done an unmatched job for Los Alamos and for New Mexico. One thing for certain — whoever they find to replace him won't be as good a downhill skier."

—Gary Johnson, Governor of New Mexico

Sig and New Mexico Gov. Gary Johnson sign an agreement in 1995 in which the Lab provides technical support for a statewide computer telecommunications system.

"Sig and I worked very well together. In fact, he and I were closer partners than many people realized. And this solves the mystery as to why he chose to leave LANL at this time. Without me in Congress to guide him, he will be a lost soul. Seriously, he has been an outstanding director — even without my help. He will be sorely missed by those of us who served in Washington during his tenure or who worked under him at the Lab. I will always admire Sig. I wish him and his family all of the best."

—United Nations Ambassador Bill Richardson, former U.S. congressman from the district that includes Los Alamos

Listening to former New Mexico Gov. Bruce King

"As a result of the confluence of historical and economic forces, the Laboratory has faced greater challenges during your tenure than at any time since the Manhattan Project. The Cold War came to an end, ES&H issues gained prominence, public awareness and involvement in our operations increased, high visibility news media exposure of criticisms of the Laboratory became prevalent, funding for research came under pressure and the worth of science was questioned by many. The reason for the very existence of the Laboratory was called into question. Your vision led to a new definition of the Laboratory mission in the post-Cold-War period: to reduce the global nuclear danger. This is a very clear and compelling need, and under your leadership we have entered a new era. ... The unswerving commitment you have given to great science as a means of fulfilling our mission is a principle that the Fellows agree is vital to the Laboratory."

—Letter to Sig from Thomas Wangler, coordinator of the Laboratory Fellows, on behalf of the Fellows

Lt. Gen. James Abrahamson, then director of the Strategic Defense Initiative Organization, checks out the effect of a neutral particle beam on a rock during a 1987 visit.

1977 The Weapons Neutron Research Facility produces its first neutrons.

1978 The plutonium processing facility at TA-55 becomes operational.

1979 Donald Kerr becomes the fourth director of the Lab.

1980 The branch of the IGPP at the Lab is established.

Sig becomes associate division leader of Chemistry - Materials Science Division.

1981 Sig is named deputy division leader of MST.

The Center for Materials Science is established with Sig as acting chairman.

Los Alamos Scientific Laboratory becomes Los Alamos National Laboratory.

1982 The National Flow Cytometry Resource is designated at the Lab by the National Institutes of Health and the DOE.

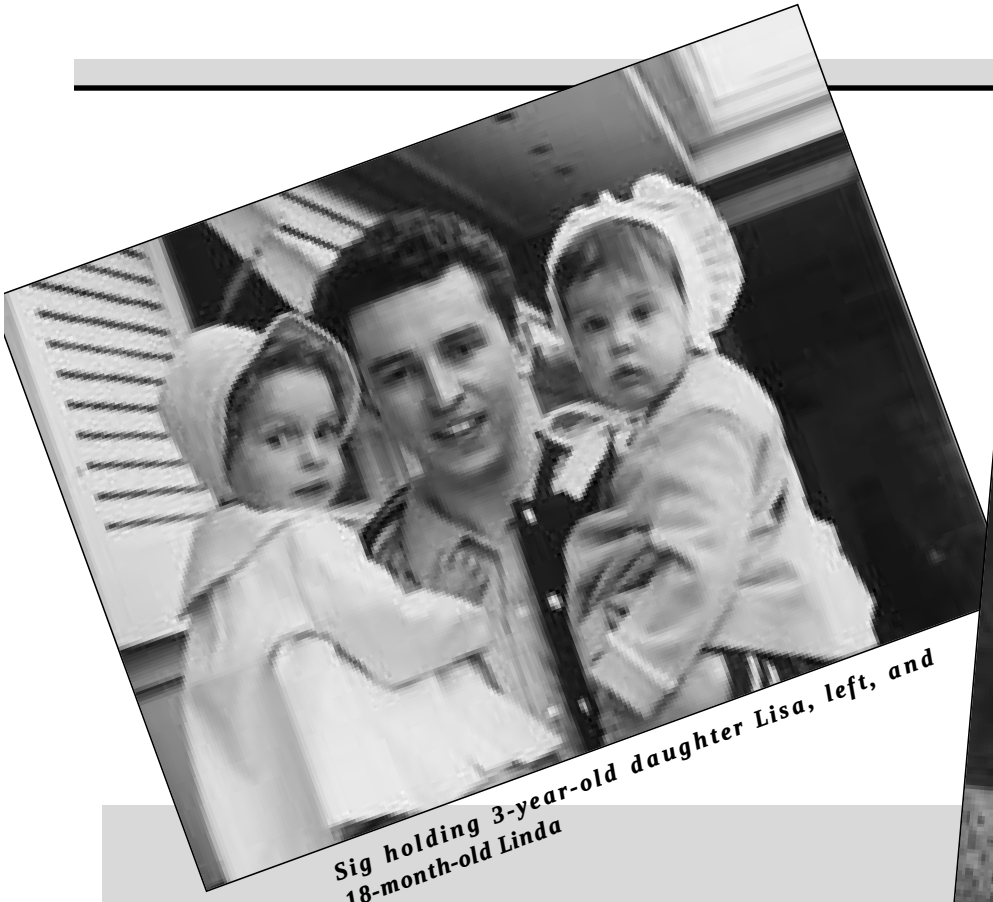
1983 Sig is appointed division leader of MST.

The J. Robert Oppenheimer Study Center is dedicated.

1984 Sig receives E.O. Lawrence Award.

The National Laboratory Gene Library Project is initiated.

The Lab's Wellness Center opens.



Sig holding 3-year-old daughter Lisa, left, and 18-month-old Linda

Sig and Nina at Nina's prom in 1964

Husband and father

by Nina Hecker and the girls, Lisa, Linda, Lori and Leslie

What an honor it was when Sig was first asked to step in as director of the Laboratory. I thought, "My gosh, for any person — especially my 41-year old Austrian immigrant husband, who came to America at the age of 13 (speaking no English) and who was the first in his family to attend college — to be asked to be the director of a national scientific research laboratory is a major life accomplishment." I was so proud

We were all surprised when the University of California asked Sig to apply for the Directorship and even more astonished when he was offered the job as the Lab's fifth director. Since we always make important decisions together, we discussed the offer and decided that he should give it a shot. Sig always loved the Lab and Los Alamos, and we thought this would be a great opportunity for him to help further the Lab's mission, as well as give something back to the community. I don't think either of us anticipated what was in store for us and our daughters for the next 12 years.

I remember when we told the girls he was going to be director. We called the girls to a family meeting and told them we had an announcement. Then Sig told them that he was quitting his job. Before he could continue, Lisa jumped up in excitement and told us that she had a dream about this last night and she was so happy. Well, Sig hadn't even announced yet that he was quitting to become director and asked Lisa why she was so excited. She said that in her dream, "Dad quit his job to become a professional ski bum and the whole family got to come along!" So, when Sig did finally tell the girls that he was

Sig and Nina, 1970

Sig and Lori

Sig and Leslie

going to be director of the Lab, it wasn't as exciting to the girls as if he was going to be a ski bum, but everyone was happy.

Sig's being director affected each family member differently. Leslie and I were the most directly affected, since we were at home. The other girls were already graduated from high school or nearly graduated. But, Leslie and I endured both the greatest disadvantages and garnered the most benefits from Sig's directorship. We had to spend many evenings home alone while he was at work or on travel, but we also got to accompany him on several interesting trips, as well as meet all the fascinating people he brought home to dinner. Each of the girls wanted to relate a story about Sig's years as director:

Lisa *— As everyone knows, my dad is one of the least political people around. I think one of the most difficult and unanticipated duties of his job was learning how to handle Washington, D.C. I recall once, about six years into the job, he had to testify in front of a House committee on the usual subject: Why should Congress continue to fund the Lab and at what level should it be funded? I sat in the back of the committee room to watch the show; I thought it would be pretty exciting to watch my dad testify in Congress. Well, first, he shows up in a light tan-colored cotton suit. I'm thinking, doesn't he know everyone in*

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1985 Sig becomes chairman of CMS.

Science Digest lists Sig in its "Year's Top 100 Innovations."

John Herrington becomes the Secretary of Energy.

1986 Sig becomes the fifth director of the Lab.

The HIV/AIDS database is established at the Lab.

1987 The INF treaty is signed.

The Lab begins the holiday closing period as a cost-saving measure.

HIPPI is developed at the Lab.

The prime contract to operate the Lab is renewed by DOE and UC.

1988 Sig is elected to the National Academy of Engineering.

The Joint Verification Experiments are conducted successfully at the Nevada and Semipalatinsk test sites.

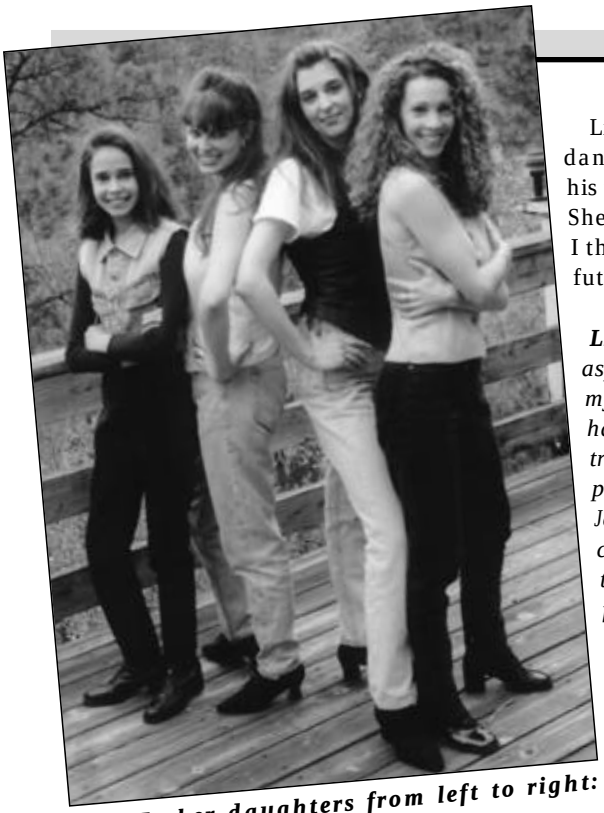
The Space Sciences Laboratory is dedicated at TA-3.

The Lab is designated as a Superconductivity Pilot Center.

The Advanced Radiochemical Weapons Diagnostic Facility is dedicated at TA-48.

The Lab is designated as a human genome research center.

The Advanced Computing Laboratory is established.



The Hecker daughters from left to right: Leslie, Lori, Linda and Lisa.

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Washington wears navy blue, even when it is mid-July and 95 percent humidity? It only got worse from there: Before he went to the table to testify he took off his jacket and exposed his short-sleeved, mint green-colored shirt. I was aghast! Luckily, regardless of his garb, he knew how to talk to those congressmen and women and had them eating out of his hand by the end of his testimony. As a veteran congressional staffer myself, I know that mastering Washington is not easy, and he did it very well. I don't think, however, that those frequent, quick, busy, humid trips to Washington are something he will miss.

Sig with Leslie at Festival Los Alamos, 1996

Lisa was always Sig's political confidant, and I know at least she enjoyed his frequent trips to Washington. She even took him clothes shopping; I think mostly to save herself from future embarrassment!

***Linda** — I think one of the aspects of being director that my dad enjoyed most was having the opportunity to travel to so many interesting places: Russia, China, Japan, England, and of course, coast to coast in the United States. My favorite stories are of his travels to Russia. I remember him telling us about one of his early trips to Russia. He was so impressed by not only the beauty of the cities, the architecture and the art, but also by the people. He enjoyed watching the people in their natural setting, going about their everyday lives. In Moscow, he would jog through the streets in the early morning, (the first time any Russians saw bright purple running tights!) and observe the people on their morning errands: women going to the bakery, children bundled up and walking to school, men and women heading off to their jobs. I know he especially loved to watch the children, thinking to himself that these kids, with their backpacks and snowboots, are the same as any American or Asian or African kids, all going off to school in the morning to learn — to fill their brains with fresh ideas and new curiosities — that they will someday use to shape the future of the planet. I expect that my dad will still get to travel when he leaves the directorship, and I hope he has the opportunity to go back to Russia a few more times. He has worked with and observed that country with great interest for over a decade and has fostered good relations with his counterparts at their scientific laboratories. I hope he will be able to continue his association with that country, as well as travel to more new and interesting places in the future. I look forward to hearing stories of his travels for years to come!*

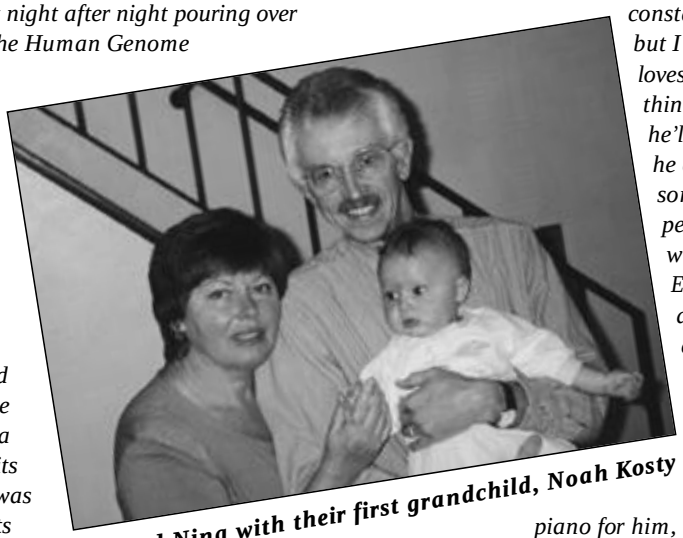
Sig loved to share pictures, artwork and cultural artifacts with Linda, our artist in the family. He brought home various prints he purchased from street vendors and always brought the girls small gifts, such as Matrushka dolls from Russia.

Celebrating Nina's 50th birthday, January 1997

***Lori** — I think one of the hardest things my dad had to do as director was give up being a scientist, and, to this day, I think he's still a little disappointed that none of his daughters followed in his footsteps and pursued a career in science. I remember in 12th grade, only a few years after he became director, I had to write a report on the Human Genome Project for my biology*

Sig and Lisa

class. He was so excited to help me gather information for my report, while, at the beginning, I was less than enthusiastic. He brought home armloads of information from the Lab, and we spent night after night pouring over the intricacies of the Human Genome Project. I began to become more and more interested; he, of course, remained full of energy and excitement about this great new project at the Lab. As an aspiring nurse, what piqued my interest was the fact that the Lab, a facility known for its nuclear research, was working on projects affecting our health. This was an aspect of the Lab's new post-Cold-War mission, and my dad was very excited about it. The Lab had the chance to forge an innovative path in its research — and he could lead the Lab in attaining these goals. He has always been very proud of the Lab's ability to change its mission and accomplish the wonderful things it has in health sciences, DNA research and other nondefense areas. I got an "A" on my paper and did become a nurse, and I still enjoy talking to my dad about medical and health-science research being conducted at the Lab. I know he has enjoyed being director of the Lab, but am glad he will have the opportunity to take up research again — I think that's where his real strength lies.



Sig and Nina with their first grandchild, Noah Kosty

Sig's zeal for science was quickly brought out by helping the girls with school projects — which is one reason they sometimes didn't ask for help! Although the girls always valued his help, I think the materials science GRAs and postdocs will better appreciate Sig's zest for research!

***Leslie** — Unlike my sisters, since I was only three years old when my dad became director, I've never known him as other than director of the Lab. His job has kept him busy and constantly traveling, but I know that he loves his job, and I think that, in a way, he'll miss it. I know he enjoyed meeting some very famous people. My favorite was the time when Edward Teller was at our house for dinner. I was still pretty young then, maybe nine or 10, and since I was too shy to play the piano for him, he played for me. Let me tell you, not only is he a world-famous scientist and one of the smartest minds in history, but he is also a wonderful piano player. I know that Dr. Teller was one of my dad's biggest inspirations, and that day, he also inspired me.*

Then (1972) ...

... and now (1997)

Sig may make a scientist yet out of Leslie. I know he'll keep trying during her last three years of high school! She and I will be very glad to have him home more — we have lots of plans for his free time.

In conclusion, although Sig's hair is a little more gray and his body is a little thinner (the former he would attribute to having four daughters, and the latter he would attribute to mountain biking and skiing), he's no worse for the wear! We would like to congratulate him for a job well done. We are all so proud of his hard work and many accomplishments and want to thank him for sharing with us his experiences, travels, successes, enthusiasm and knowledge. We would also like to wish him well in his future endeavors and to remind him that we are here, by his side, waiting to share in his new experiences. We know there are many more good things to come!

1989 Sig receives the Kent Van Horn Distinguished Alumnus Award from Case Western Reserve University.

BEAR (Beam Experiment Aboard a Rocket) is successfully tested.

LANSCE is dedicated at TA-53.

Lab program to develop the W88 warhead for the Trident II 5D missile is completed.

Human telomere is identified by Lab researchers.

James Watkins becomes the Secretary of Energy.

1990 President Bush declares the end of the Cold War.

The Lab wins seven R&D 100 awards.

The concept of Accelerator Transmutation of Waste is developed.

Field experiments are conducted in New Mexico and California as part of the Oil Recovery Technology Partnership.

1991 The Year of the Tiger (Team).

The Soviet Union is dissolved.

The Lab is designated as a national High-Performance Computing Research Center.

The first New Mexico High School Supercomputing Challenge concludes with activities at the Laboratory.

The 'Extreme' Side of Sig

Recollections ... and a recommendation

What goes up ...

Most people who know Sig Hecker know about his love for sports, especially skiing. What few of them know is that his athleticism and enthusiasm for sports could have been an even larger part of his life. It happened this way.

During his junior year in high school in Cleveland, Sig took a career aptitude test. The results were mailed to his home, so his father was the first person to see what careers Sig might be most inclined to pursue. They were Professional Athlete/ Outdoor Recreationalist, Photographer/Multimedia and lead dancer on Dick Clark's Dance Machine. Outraged, his father destroyed those results and forged a set of career choices he deemed more appropriate: Medical Doctor and Metallurgist.

As we know, Sig chose to pursue a career in metallurgy, never doubting the test results. Fortunately, he did not choose to become a medical doctor. While he is wonderful as a "just-in-time" ambulance driver and organizer of rescue operations frequently called on to get his unlucky mountain biking partners to the emergency room for stitches and casts, his ability to deal with blood can be summed up in one word: pansy.

We do wonder sometimes what would have happened had Sig followed the real predictions of his high-school-test results. He certainly could have excelled as a downhill racer, joined the U.S. mogul tour, become a rodeo clown or, perhaps, become a helicopter-skiing guide following a rewarding career on the world extreme-skiing tour. Then again, he might have ended up a ski instructor and waiter at Crested Butte, while sharing a one-bedroom condo with eight roommates.

... must come down

One of Sig's passions that goes hand in hand with his sports interests, and which the aptitude test predicted, is making his recreational "memories" permanent with photos and videos. While he claims that he is shooting video and taking pictures because of the area's beauty, in reality he takes very little video and few photos of the scenery. In fact, carrying a camera is a thinly veiled excuse to get first tracks: "Let me ski down first, so I can film everybody coming down."

It also offers an unparalleled opportunity for catching friends and family in awkward positions. His most treasured videos and photos are of skiers and mountain bikers in various stages of losing control and of the inevitable aftermath — bodies and equipment scattered about the mountain or trail.

Biking on the Slick Rock Trail near Moab, Utah, in 1995

Sig rarely lets others ski or bike with his cameras because he worries that they will break something in their next crash. Therefore, no one ever has the chance to record Sig attempting to get big air skiing or by biking ("sliding") off a 10-foot cliff in Moab, barely stopping before he would have fallen off a 40-foot cliff. No one ever has the video camera rolling when Sig, while helicopter skiing in Canada, launches off a jump going too fast, sails 30 feet and lands squarely on his video camera/backside, packing every part of the camera with snow.

Sig has many other talents relating to sports, and we are recommending a good way that he can put them to use — opening up Sig's Sports Safaris (or S-cubed), a store that has top-of-the-line sporting equipment and clothing; organizes treks, biking, skiing and water adventures all over the world; and has an entire room/shrine dedicated to Volant skis.

This is not a pathetic attempt by us to obtain sports equipment at greatly reduced rates nor a desire to have our

Taking a break while biking in Utah

own adventure consultant. We believe that Sig's metallurgy background and Austrian upbringing prepared him well for identifying the next breakthroughs in sporting equipment. His childhood experience of making skis from old barrels while growing up in the Austrian Alps, his many years as a hard core skier and biker, and his experience as a materials scientist have fully prepared him for this mission.

We wish Sig the best of luck in his new career no matter what he chooses. (Open the store, Sig.) We just ask that he doesn't dedicate all of his newly found free time to prepare for the next ski season. If he does, we will have even more trouble keeping up!

"Ski Buddies"

Molly Cernicek	*Lisa Hecker*
Daryl Gardner	*Tom Kosty*
Kris Gardner	*Steve Russell*
Sam Gardner	*Suz Schillaci*

Skiing The Trees

Rhythmic paths
Through towering aspen columns
Beckon the celebrants
To a vaulted evergreen sanctuary
Momentarily draped
In turbulent tumbling tapestries of snow
Hosting a breathless communion of fellowship
By wondrous nature blessed.
—Roy Greiner, retiree

Helicopter skiing in British Columbia, Canada, last winter

"Getting runs" at the Pajarito Ski Area

1991 continued

The Lab develops a portable LIDAR system for use in Operation Desert Storm.

The University of California creates the President's Council on the National Laboratories to help assess the labs' future.

1992 Lab and Russian weapons officials sign an agreement calling for collaborative research ventures.

Russian lab directors visit Los Alamos and Lawrence Livermore national labs; Sig and John Nuckolls, director of LLNL, return the visit the same month.

The Continuous Quality Improvement (CQI) program begins.

The Connection Machine 5 is delivered to the Lab.

The Lab completes several analyses related to the high-level waste storage tanks at Hanford.

1993 Sig receives honorary membership in the American Ceramics Society.

The Lab commemorates its 50th anniversary.

ALEXIS, a satellite designed and built at the Lab, is launched.

President Clinton visits the Laboratory.

The Lab flattens its management chain in a major organizational restructuring.

Times to remember

"I was a brand new assistant professor in the Department of Metallurgy at Case Institute of Technology in the fall semester of 1963. ... the two brightest undergraduates in metallurgy had just transferred over from physics — Sig Hecker and Bob Smialek. I often wonder (and he must, too) what would have happened if Sig had stayed in physics. ... The second year, Sig and Bob asked me to be their advisor for their senior thesis, which was a requirement for graduation. ... They did such a thorough job that we wrote it up as a paper, and it was subsequently published in Physica Status Solidi. It was Sig's first publication and my first work solely performed in Cleveland. He introduces me as 'my old professor.' I introduce him as 'my young student.'"

Sig and Hans Bethe

—Terry Mitchell, Lab Fellow in the Center for Materials Research

"Our director is a past-president of the Los Alamos Ski Club and a fanatic about alpine skiing. Sig predicted a few years back that a new breed of skis would rapidly become popular. This prediction has turned out to be remarkably precise. … The new breed of skis that is currently sweeping the marketplace is the so-called shape skis, which are shorter than most skis and shaped like an hourglass, when viewed from the top. This combination of short length, wide tip, wide tail and relatively narrow waist does in fact make skiing relatively easier. Even so, predicting that it would become popular is unlikely because in the macho world of skiing, it would seem 'unmanly' to use a shorter ski to improve one's ability to make turns. Such a thing would have been looked upon as, well, like using training wheels on a bicycle. Sig was able to see right through such flawed thinking. … What this all means is that the committee charged with recommending candidates for our next director should focus their attention on past presidents of the Los Alamos Ski Club."

Sig and Edward Teller

—Bucky Kashiwa, staff member in Fluid Dynamics (T-3)

Standing in front of a fountain and statue in China's Science City that shows an exploded view of a nuclear device

"Soon after I received my clearance and had begun working on plutonium materials issues, I found that Sig had left a treasure trove of data behind that had neither been analyzed nor prepared for publication. I set about to prepare some of this information for publication. The topic, unfortunately, was clearly classified, so the publication could only appear as an internal report. Consequently, I didn't orient the writing toward a 'refereed' journal standard and instead aimed to simply tabulate the data in an orderly fashion. Since the work was largely Sig's, his name clearly had to appear among the authors, but he had indicated that he wouldn't have the time to participate actively in the writing. Instead, at one advanced point in the writing process, I made an appointment with him to review the draft document. In that meeting, I clearly learned that Sig did not accept a lower standard based on the classified nature, and he urged me to go back and do a better job. The lesson I learned from Sig in this instance was to *never* accept lower standards, or take the easy way out."

You really know the Cold War is over when the scientific director of a Russian weapons lab, Yevgeny Avrorin, right, presents the director of a U.S. weapons lab with a piece of a dismantled Russian nuclear warhead inscribed "From Russia with love." The exchange took place during the 50th anniversary commemoration in 1993.

—Mike Stevens, deputy leader, Center for Materials Science

Sharing a story with Wesley Jones of the Analytical Chemistry Group at Jones' retirement party in 1986

Sig receives honorary doctor of science degree from the College of Santa Fe in 1988

"I first met Sig when he was a post-doc in CMB-5. All who had come in contact with him were impressed with his intelligence, enthusiasm and willingness to explain details of his experiment. Sig became my division leader, and I recall being impressed with his 'class' when he entered a room where a colleague and I were discussing the possibility of the colleague accepting a 'better' job at a laboratory in the East. It was obvious that Sig knew the topic under discussion and encouraged our continuing as he left the room. He was clearly interested in the professional development of that gentleman even though he also knew that he might lose a valued assistant."

—John Buchen, retiree

Reflections

Traveling in style, in the presidential limousine

"On the occasion of the Heckers' 25th wedding anniversary, their daughters decided to throw them a party in the back yard. A big crowd of friends and neighbors showed up, and we had a very lively local band playing for us. As the evening wore on, the crowd and the band loosened up considerably, so that by 10 p.m. or thereabouts, everyone was dancing up a storm and the band was playing at full tilt. Well, Los Alamos happens to have a noise statute that requires loud parties to go through a phase transition to quiet parties at 10 p.m. We were not aware of this, of course, but we were politely and firmly informed about it by two of Los Alamos' finest, who appeared at the front door around 10:10. That sure was a good party!"

—Mario Schillaci, staff member in ESH-12

Sig with Richard Rhodes, author of "The Making of the Atomic Bomb"

"Sig Hecker is as intense in his sporting activities as he is in his science. … (His) enthusiasm for the sport of skiing and his love of powder have never once diminished in the 19 years since giving me my first lesson. The last spring snows this year were late in April. The Friday night after that snow, Sig called to ask if I were ready to 'get the last powder of the season.' The lifts had already been closed for three weeks, mind you. We hiked the mountain on Saturday morning 'getting the last powder.' making not just one run, but two."

—Mike Stout, staff member in MST-5

Sig and Nina in Moscow in the summer of 1996

"When Sig first told me of his decision to step down as director, my first reaction was "what a loss for the Laboratory." Sig has been a visionary and an inspirational leader — one I will always admire and hold in the highest esteem. Working day-to-day with Sig, I have gained the experience, opportunity, and most of all the privilege of working so closely with one of the nation's most brilliant leaders and scientists. I have found Sig to be one of the most caring, warm-hearted individuals I have ever known. Working with him has been the experience of a lifetime. I welcome this opportunity to thank him for placing his trust and confidence in me every day. I wish him well in his new endeavors, and wish Sig, Nina, and family the very best."

—Cecilia Olivas, Sig's administrative assistant (1993 to present)

"I had the privilege of working for Sig for 11 exciting and educational years. During that time Sig was unfailingly gracious, warm, considerate and fair. In my opinion, Sig is truly a class act."

—Nancy Morrison, retiree (Sig's secretary 1982-1993)

"Bridging the Gap" plus celebrating the 50th anniversary with then Los Alamos County councilor Jim Greenwood

"Wojciech [Zurek] hardly ever wears formal attire. When he was nominated for the Fellows Prize in 1988, he checked with Sig's office to see how formally he should be dressed. Somehow, he got the impression that a suit and a tie were in order. As uncomfortable as he felt, he obliged. At the ceremony, Sig, not wearing a tie himself, introduced the winners and asked them to come to the podium to accept their prizes, adding that 'only those nominees who do *not* wear a tie will actually receive the prize.'"

—Anna Zurek, staff member in MST-5

1993 continued

Hazel O'Leary becomes the Secretary of Energy.

1994 Sig and the governors of San Ildefonso, Cochiti and Jemez pueblos sign Cooperative Agreements.

The Lab's Human Studies Project Team is formed.

Los Alamos and Arzamas-16 sign collaborative agreements.

Lab and Russian scientists conduct a controlled fusion energy experiment.

The Materials Science Laboratory is dedicated.

Chromosome 16 is mapped.

1995 The Galvin Report is released.

Reporters visit the Laboratory's plutonium facility for the first time.

The US announces a ban on nuclear weapons testing.

1996 Sig announces decision to step down as director the following year.

DOE announces it will extend UC's contract to manage the Lab.

The Dome Fire burns nearly 17,000 acres.

The Newsbulletin changes to daily, online publication.

1997 Sig receives honorary degree from Ripon College.

Federico Peña becomes Secretary of Energy and visits the Lab.

From Poland To Cleveland To Los Alamos

Enjoying life as director — in between the crises

Sig Hecker first came to Los Alamos National Laboratory in June 1965 with a new wife, a new bachelor of science degree and a new job as summer graduate student.

Except for just a few years, he has remained at the Lab since that time, rising to positions of greater and greater responsibility until becoming the Laboratory's fifth director in January 1986.

Hecker was born Oct. 2, 1943, in Tomaszow, Poland, where his parents had been relocated from Sarajevo, Bosnia. A few months later, his father was drafted into the German army and the rest of the family moved back to Bosnia, living a peripatetic existence during the chaotic days near the end of World War II.

His father, who was sent to the Russian front, was declared missing during the war. After the war, his mother remarried and the family settled in Rottermann, Austria, where Hecker grew to love mountains and skiing. When he was 13 years old, the family immigrated to Cleveland, Ohio.

Hecker attended Case Western Reserve University in Cleveland, earning his bachelor's degree in metallurgy in June 1965. A few days later, he married his fiancée, Nina, and headed west to Los Alamos.

After his first summer at the Laboratory, he returned to Case Western, receiving a master's degree in metallurgy in 1967 and a doctorate in 1968. He returned to the Laboratory for two years as a postdoctoral appointee, then joined General Motors Research Laboratories in Warren, Mich., as a senior research metallurgist.

After three years at General Motors, Hecker came back to Los Alamos for good as a technical staff member in the Physical Metallurgy Group. His research interests focused on plutonium metallurgy, the mechanical behavior of materials and materials for radioisotopic heat sources. He was a prolific technical author and editor.

In 1984, Hecker received the prestigious E.O. Lawrence Award from the Department of Energy, which cited his "contributions to diverse fields of materials science, including important contributions to the physical metallurgy and mechanical properties of plutonium metal and its alloys, as well as outstanding experimental contributions to the understanding of plasticity at large strain and high strain rates …"

Hecker became associate division leader of the Chemistry-Materials Science Division in 1980, deputy division leader of the Materials Science and Technology (MST) Division and acting chairman of the Center for Materials Science (CMS) in 1981, MST division leader in 1983 and CMS chairman in 1985.

He was selected director in December 1985, succeeding Don Kerr and following J. Robert Oppenheimer, Norris Bradbury and Harold Agnew. He is the first non-physicist to lead the Laboratory and has served longer in the position than any other director except Bradbury.

Hecker guided the Lab during a period of significant change, resulting primarily from the end of the Cold War and the accompanying mission and financial uncertainties. When he became director, the Cold War was a driving force for the Lab's direction. A few years later, he was meeting with his counterparts from weapons laboratories in the former Soviet Union and leading a series of lab-to-lab interactions between the former adversaries.

Despite the hectic pace of the director's job, Hecker has maintained his love of mountains, skiing and exercise. He is a familiar figure on the slopes of Pajarito Mountain during ski season and on the jogging trails around the Lab and town at other times of the year.

Hecker has been active in numerous national, international and state organizations. He is a member of the National Academy of Engineering and a fellow of the American Society for Metals. And it recently was announced that he has been selected a fellow in the Minerals, Metals and Materials Society (TMS).

Reflections
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