

NIST's Boulder laboratories and is a wonderful example of federal research that led to significant commercial spin-offs.

These are just some of the contributions NIST's Boulder laboratories have made to the nation in the half-century of their existence. NIST is poised to contribute to even greater advances in the 21st century. I will continue to call attention to the Boulder labs' contributions and the necessity of upgrading the facilities so that the Boulder scientists can continue to produce top-flight research.

As the attached article from the *Daily Camera* notes, Washington scientists who were reassigned to the new Boulder labs in 1954 weren't happy about moving to what they thought was a "scientific Siberia." It's remarkable what a difference fifty years can make. It turns out that NIST's arrival triggered a "scientific renaissance" that made Boulder the scientific hub it is today.

I am proud to represent the scientific hub of Boulder and all the talented and dedicated scientists and employees who work at NIST, which has rightly been called a "crown jewel of the U.S. government." I would like to express my congratulations again to NIST's Boulder labs for reaching this important half-century mark.

[From the *Daily Camera*, Aug. 29, 2004]

NIST AT 50

FEDERAL LABS HELPED TURN BOULDER INTO
TECH CENTER

(By Todd Neff)

Half a century ago this Sept. 14, President Dwight D. Eisenhower stepped before a new \$4 million structure south of Boulder and dedicated the U.S. Department of Commerce's Boulder Laboratories. It was a landmark day for the city, then with a population of 20,000, and not just because it was the first visit to Boulder by a sitting president. The 10,000 people who braved the beating sun that Monday could not have known the Boulder labs would, over the course of the next 50 years, bring billions of dollars and thousands of jobs to the area. Nor could those present have imagined the role the labs would play in turning Boulder into a technology center.

The lab's arrival in Boulder was a combination of good fortune and determined effort. Some of the good fortune was President Harry Truman's 1949 secret order to stop clustering major buildings in Washington, D.C., because of the threat of nuclear attack. Yet the National Bureau of Standards' Central Radio Propagation Laboratory needed room to grow. That laboratory, like other NBS labs, had a basic mission that hasn't changed: Establish the standards that form the basis of technological development. Without standards, radio stations would broadcast on one another's turf, manufacturers would have no means of assessing the quality of materials such as steel, and time synchronization critical to communications, navigation and information technology wouldn't be possible.

As a *Daily Camera* editorial on Sept. 10, 1954, put it "Of all the agencies of the government, the NBS is perhaps the greatest money-saving organization we have. Its huge cost of maintenance is offset many times by what it saves the government, business and the people in money, time and safety." With the Washington, D.C., area out of the question, NBS sought a small-town location with little radio noise, a university and a nearby transportation hub. Boulder, Charlottesville, Va., and Palo Alto, Calif., were the main contenders. Some of the key effort came from the Boulder Chamber of Commerce, led

by Francis W. Reich. The chamber led a 1950 cash drive that raised \$90,000—about \$700,000 in today's dollars—in two weeks. They used \$63,000 to buy 217 acres of pasture to donate to the federal government. Most of the rest bought the land east of Boulder that's now home to Ball Aerospace & Technologies Corp. The local money tipped the scales. Crews broke ground at the Boulder Labs in July 1952, finishing work in the spring of 1954.

It turned out to be a good investment. A 2002 University of Colorado study projected that the labs would bring \$2 billion in economic benefit to the state between 2001 and 2005—and \$340 million to the city of Boulder alone. About 450 scientists and support staff—some from Washington, other from local NBS field offices—had moved in by the time Eisenhower rode up the Boulder Turnpike on his summer White House at Denver's Lowry Air Force Base. Yet those scientists weren't the first at the site. The Atomic Energy Commission, in a rush to build hydrogen bombs after the Soviet Union's successful nuclear tests, wanted a remote location to produce liquid hydrogen for its Los Alamos labs. It tapped NBS's Washington, D.C.-based Heat and Power Division to build a plant to produce liquid hydrogen. The plant began churning out the super-cold liquid in 1952 that would go into the world's first hydrogen bomb. When a nuclear scientists decided atomic bombs didn't need mass volumes of liquid hydrogen, the operation became the NBS's Cryogenic Engineering Laboratory in Boulder.

By the Boulder NBS' 10-year anniversary in 1964, it employed 1,400 people in two major laboratories. One was the original Central Radio Propagation Laboratory, which tested radio-wave behavior and developed standards associated with all sorts of radio transmission and propagation, including weather radar. The second was the Cryogenics Engineering Laboratory.

The names have all changed, often in mind-bending ways. For example, NBS' Central Radio Propagation Laboratory moved to the U.S. Weather Bureau in 1965, then became the Environmental Science Services Administration and, in 1970, the National Oceanic and Atmospheric Administration, or NOAA, as it's known today. The same 1965 move created the Institute for Telecommunication Sciences, which did radio-spectrum work. Today, the Institute for Telecommunication Sciences labs make up the whole of the National Telecommunications and Information Administration's presence in Boulder. The Cryogenics Engineering Laboratory and a host of additions remained with the NBS until 1988, when NBS became the National Institute of Standards and Technology, or NIST.

Then there were the two NIST joint laboratories with the University of Colorado at Boulder. The Joint Institute for Laboratory Astrophysics, or JILA was created in 1962. Its researchers work in everything from astrophysics to atomic physics. It was two JILA scientists, Eric Cornell of NIST and Carl Wieman of CU, who won the 2001 Nobel Prize in physics for their discovery of Bose-Einstein condensate, a new form of matter. The CU-NIST Cooperative Institute for Research in Environmental Sciences, or CIRES, was created in 1967 and focuses on atmospheric physics. NIST, NOAA and the smaller NTIA make up today's Boulder labs. Combined, they employ about 1,800 including full-time government researchers, visiting researchers and students. About 750 are associated with NIST, 1,000 with NOAA and 75 with NTIA. Research has evolved even faster than names.

Bob Kamper, 71 a physicist who started at the labs in 1963 and rose to serve as NIST's

director in Boulder from 1982 until his retirement in 1994, described how work evolved in the Cryogenics Division, where he started.

First it was about liquid hydrogen for the U.S. nuclear-weapons program. But by the 1960s, superconductivity—in which certain materials have zero electrical resistance at extremely low temperatures—was a major research interest. Expertise in super-cold temperatures also led to work in metallurgy (metals become brittle when temperatures plummet), work that eventually became part of today's NIST Materials Reliability Division. Among its efforts, that division is investigating the causes of the World Trade Center collapse after the terrorist attacks of Sept. 11, 2001. Efforts to establish the behavior of fluids at ultra-low temperatures became part of the NIST Physical and Chemical Properties Division. Kamper said that division played an important role in figuring out characteristics for new refrigerants in the wake of chlorofluorocarbon bans, for example.

Superconductivity-bred expertise in magnetism led to more advanced superconductor work as well as broad research in computer-storage devices. NIST's \$93 million 2004 budget includes \$29 million from outside sources, such as other government agencies and technology companies. "You very much worked on what people would pay for, which is why I would say there is very little dead wood," Kamper said. He said he doesn't think the research ethos has changed. "We were pretty enthusiastic way back when, and talking to the youngsters now, I think they still are," Kamper said. "They're very much absorbed in their work."

John Richardson, 82, arrived in Boulder in 1952 to work in microwave physics. He moved into the new labs when they opened in 1954. Richardson said NBS's arrival in Boulder triggered a "scientific renaissance," strengthening the University of Colorado, luring the National Center for Atmospheric Research to the city and fueling technology companies such as IBM and Ball Aerospace & Technologies Corp.

Many Washington scientists reassigned to Boulder in the early 1950s were "very anxious about it, because they viewed Boulder as a scientific Siberia," Richardson said. Half the staff left rather than come to Boulder, said Alan Shapley, 85. Shapley came to Boulder on an NBS scouting mission in the late 1940s and worked at what became NOAA until his retirement in 1983. "There were very few who had ever heard of Boulder," Shapley said. But that changed quickly. Richardson said he and other Boulder labs researchers taught as adjunct professors at CU. The NBS presence attracted major scientific conferences to Boulder, as well, he said. "Visitors came, saw the climate, saw the quality of life, and I have no doubt that many were persuaded to locate here, either individually or in business," he said. He calls NIST a "crown jewel of the U.S. government." "All our measurements and all our scientific progress ultimately can be traced back to NIST," Richardson said. "If there were no NIST, it would have to be invented."

ON THE DEATH OF FORMER CONGRESSMAN ROBERT D. "BOB" PRICE OF TEXAS

HON. MAC THORNBERRY

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, September 7, 2004

Mr. THORNBERRY. Mr. Speaker, I regret to have to inform the House that our former colleague, Robert D. "Bob" Price, passed away August 24, 2004.

Congressman Bob Price's life was a shining example of a true American experience. Throughout his 76 years, Bob Price compiled an admirable record of service to his community, his state, and his country.

Bob Price was born September 7, 1927 in Reading, Kansas. He received a bachelor's degree in animal husbandry from Oklahoma State University in 1951, the same year he married his wife, Martha, or "Marty", in Oklahoma City.

Also in 1951, Mr. Price began a four-year stint in the United States Air Force. During the Korean Conflict, Mr. Price served as a fighter pilot, flying 27 combat missions and earning the Air Medal. After leaving the Air Force, Mr. Price owned and operated a ranch with his wife in Pampa, Texas for 50 years.

He was first elected to the U.S. House in 1966 and served here for eight years. Mr. Price served on the Armed Services Committee, the Agriculture Committee, and the Science and Astronautics Committee. During his time in Congress, Mr. Price was known as the only member who had flown Mach-3 in the SR-71 Blackbird, the F111-A and the F-4E Phantom. After leaving the U.S. House in 1975, he later served in the Texas State Senate from 1978 through 1980.

Mr. Price was also an active member of his community as a member of the First Baptist Church, the Pampa Masonic Lodge Number 966 AF & AM, the Pampa Shrine Club and the Downtown Kiwanis Club. He was also a member of the El Paso Scottish Rite Consistory and the Khiva Shrine Temple of Amarillo.

Bob Price is survived by his wife, Marty; a son, Carl Price, his wife, Kelly, and their children, Courtney, Grayson, Bridget, and Daniella, all of Houston; a daughter, Janice Johnson, her husband, Marc, and their children, Nicholas, Miles, and Elise, all of Indianapolis, Indiana; and a brother, Ben Price Jr. of Reading, Kansas. Mr. Price was preceded in death by his infant son, David Wayne Price, and another son, Robert Grant Price, who died in 1987.

I ask all of my colleagues to join me in extending condolences to the family and friends of former Congressman Bob Price of Texas and in honoring his service and many contributions to our great Nation.

ROY CAMERON HARRINGTON
MAKES HIS MARK ON THE WORLD

HON. BOB ETHERIDGE

OF NORTH CAROLINA

IN THE HOUSE OF REPRESENTATIVES

Tuesday, September 7, 2004

Mr. ETHERIDGE. Mr. Speaker, I rise today to congratulate Roy and Rhonda Harrington on the birth of their son, Mr. Roy Cameron Harrington. Roy was born on Thursday, July 1, 2004 and he weighed 7 pounds and 5 ounces. Faye joins me in wishing Roy and Rhonda great happiness during this very special time in their lives.

As a father of three, I know the immeasurable pride and rewarding challenge that children bring into your life. The birth of a child changes your perspective on life and opens the world to you in a fresh, new way. Their innocence keeps you young-at-heart. A little miracle, a new baby holds all the potential of what human beings can achieve.

With great happiness, I welcome young Roy into the world and wish Roy and Rhonda all the best as they raise him.

THE RETIREMENT OF DR. CARL G. ANDERSON

HON. CHARLES W. STENHOLM

OF TEXAS

IN THE HOUSE OF REPRESENTATIVES

Tuesday, September 7, 2004

Mr. STENHOLM. Mr. Speaker, I would like to share with my colleagues a story that appeared in the August 30, 2004 edition of the Lubbock Avalanche Journal, regarding Dr. Carl G. Anderson and his retirement, both as the Cotton Marketing Specialist for the Texas Cooperative Extension Service and as a professor with Texas A&M University's Department of Agricultural Economics.

As a West Texas cotton farmer, I will sorely miss Dr. Anderson's expertise, especially the calm, rational manner with which he makes sense of the cotton market. I often had the task of following Dr. Anderson in speaking at many a lunch or dinner, so I can attest to the respect and admiration he has among cotton farmers. He was, and will remain, a tough act to follow. I know my fellow cotton farmers, as well as all others involved in the cotton industry in Texas feel the same way.

I should note that Carl's love of agriculture was passed on to his daughter, Caroline Anderson Rydell, who worked for one of our former colleagues and was a staff member of the House Committee on Agriculture. Caroline remains in Washington and is working on behalf of American farmers and ranchers at the American Farm Bureau Federation.

It is my understanding that Carl will continue to be play a role on a part-time basis for another year. Those of us involved in cotton production in Texas will have Carl's expertise for one more year before we have to get through a planting, harvesting, ginning and marketing season without him!

I would like to take this opportunity to thank him for his 22 years of service as the Cotton Marketing Specialist for the Texas Cooperative Extension Service, and I wish him well as he begins to enjoy a well-deserved retirement with his wonderful wife, Shirley.

AG EXPERT HAS COTTON IN HIS BLOOD
ANDERSON RETIRING BUT STAYING IN FIELD
(By Joe Gulick)

Carl Anderson's involvement in the cotton industry began as a boy. He recalls picking cotton, dragging a heavy cotton sack behind him, and repeatedly hoeing the stubborn and prolific Johnson grass that sprouted in the black Texas soil of the family farm outside Taylor, near Austin.

"We had never even dreamed of Round-Up in those days," he said with a laugh, referring to the modern herbicide.

The many hours of hard work in the hot sun established character and built within him the desire to work hard and do well, he said. They also encouraged him to approach agriculture from a different perspective—one in which he used his head and not his hands. "It got me started on thinking," he said. "Thinking is a lot easier than running a gooseneck hoe and picking cotton."

The intellectual approach led to Anderson earning a doctorate from Texas A&M and becoming one of the top cotton marketing experts in the nation. His many awards and accolades attest to his success.

He will retire on Tuesday as professor and extension economist with A&M's Department of Agricultural Economics. But fortunately for the Texas cotton industry, he will continue to work part-time.

Roger Haldenby, vice president of operations of Plains Cotton Growers Inc., said Anderson is one of the leading cotton economists in the Cotton Belt—from California to the Carolinas—but is especially well known in Texas.

"Carl has been ahead of the curve on all of the market moves and has given sound and solid advice to cotton farmers on how they can market, hedge or keep their cotton from season to season," Haldenby said.

Dale Swinburn, who farms south of Tulia, called Anderson a great asset to the Texas cotton industry.

"He is a real educator and helps farmers understand the futures market. He is a great guy and is very approachable."

Anderson, who attended college on the GI Bill, worked as an economist for the Federal Reserve Bank in Dallas for about eight years after receiving his doctorate. He worked with agricultural lenders in the fledgling cattle feeding industry, primarily in the Texas Panhandle and Amarillo area.

In 1978, A&M created the position of cotton marketing specialist, and Anderson returned to his alma mater to take the job.

He recalls that he was surrounded by challenges, not the least of which was the fact that West Texas cotton quality was lacking at that time.

"The producers were very good at producing, but they did not think beyond the gin," he said. "At that point, the producer was pretty much at the mercy of the market—with the exception of a few co-ops."

Improving the quality of local cotton was a gradual process that was helped greatly by the change from hand evaluation of strength and quality of cotton fibers to machine evaluation. Cotton grown in West Texas today has higher fiber strength, longer fibers and better yields, he said.

Asked about the most rewarding part of his career, he replied, "Seeing farmers that have adapted to change, whether it was new systems of farming, new varieties or learning to price cotton when prices were most favorable."

He has seen tremendous changes in the cotton industry since his childhood, from machinery, herbicides and insect control to chemicals and developments in genetics.

"I remember my father plowing with mules," he said. "The first tractors were two-row tractors with steel wheels. Now they have four-wheel drive machines that do at least 12 rows at a time."

Anderson remembers spending the summer of 1949, after he graduated from high school, participating to a small degree in growing and harvesting the Texas cotton crop that still stands as a state record. As he retires, it appears the state will top that record this year.

"It is exciting to me that, with about half the acreage we had then, we can exceed the 6 million bales we had in 1949," he said.

The future of cotton in Texas will probably be on even fewer acres, he said. Some of the marginal acreage for cotton now will probably be used to grow other things, but the acres that remain will be higher-yielding ones.

And the United States will continue to be challenged by international competition, particularly from China, which Anderson said dominates the world in cotton production. One problem has been the shrinking of the U.S. textile industry and the strength of China's textiles, he said.

"The only way we can compete with them is to be the most efficient, from field to fabric," Anderson noted.