

SpotLight

THE PEOPLE
WHO DRIVE
OUR SCIENCE
& TECHNOLOGY

MAY 2020

LAWRENCE LIVERMORE NATIONAL LABORATORY



In their stride

SpotLight

THE PEOPLE WHO DRIVE OUR SCIENCE & TECHNOLOGY

INSIDE THIS ISSUE • • •

The latest edition of *SpotLight*, a look at the people who make up Lawrence Livermore National Laboratory, is available online. This issue features employees whose love of sport is a lifelong passion. This special edition of *SpotLight*, which typically appears in print form, is available on the web only, due to the shelter in place in response to COVID-19.

Jean Shuler began running in 1976, just as jogging's popularity began to soar in the United States, and 40 years later, she is still at it.



Roger Werne took a try at pole vaulting as a 14-year-old high school student; six decades later, he continues pole vaulting once a week during the school year and twice a week during the summer.



Don Smith has a need for speed. He feels alive on the slopes and even though he has sustained some injuries during his lifetime, if he can ski just a little faster than he did last year, when he was 79-years-old, he will have achieved his yearly goal for the past seven decades.



We hope you enjoy this edition of *SpotLight*. We'd also like to hear from you. Send us your thoughts and suggestions, whether it's what you like — or even what you don't — about this magazine, or if there is something you would like to see in coming editions. You can reach us via email at pao@llnl.gov.



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On the cover

Jean Shuler was born to run. For more than 40 years, she's had a passion for the sport. Find out what keeps her feet moving. Photo by Julie Russell/LLNL



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THE PEOPLE WHO DRIVE OUR SCIENCE & TECHNOLOGY

Come rain or shine, Shuler makes good time

BY JEREMY THOMAS/LLNL

For Jean Shuler, every Sunday morning begins the way it has for the past 40 years. She greets her friends and sets out with them on a six- to 10-mile run through Livermore's Sycamore Grove Park. The park is her church, she says, her sanctuary where she can breathe

the fresh air, enjoy the peace of open space and commune with the hawks, egrets and occasional bobcat.

"I do it because I like to be outside," Shuler explained. "I don't get people who get on a treadmill, put their headphones on and watch television. I just like to be in nature. To me, it's like a spiritual thing to be out there."

Shuler, 78, has been running more than half her life. Her enthusiasm for the sport began at the Laboratory in 1976, just as jogging's popularity began to take off in the United States. A co-worker in her division convinced her to join a Lab running team that needed a female to challenge the B Program to a race. That became the first Race of the Divisions, a friendly competition held on a mile-long course around the Laboratory that would eventually morph into the Run for HOME.

Shuler, who had never run a race before in her life, helped her team to victory. The rest, as they say, is history — she had caught the running bug.

In subsequent years, as a member of the Lab's co-ed running team, dubbed the "Roadrunners," Shuler and her teammates participated in events all over the Bay Area, including the *Runner's World* magazine-sponsored Corporate Cup, which pitted the Roadrunners against tech giants like IBM and Hewlett Packard, the annual Manufacturers Hanover Corporate Challenge and Lab-organized meets involving Bay Area companies. The team included

current and former Lab employees such as Michel McCoy (currently head of LLNL's Weapon Simulation and Computing program), Dan Moore, Hoyt Walker, Debbie Santa Maria, Monya Lane, Amanda Goldner, Alex Shestakov, Judy Harte, Bill Dunlop and Shuler's closest friendly rival, mathematician Tok Suyehiro.

The women's team was especially formidable. Alongside running mates Lane (former Lab associate director of Engineering), Rose O'Brien and Santa Maria, a former high school track star, Shuler and the Roadrunner women won a *Runner's World* Corporate Cup in Berkeley, the Bonnie Bell 10K in Golden Gate Park, a 1979 state meet at California State University, East Bay, Xerox Marathon Relays and Christmas day relays from Half Moon Bay to Santa Cruz. Shuler's most consistent racing companions, Santa Maria, Lane and Goldner, were all quite a bit younger than Shuler, but provided a high bar for her to aim for.

A TRADITION THAT LASTED

"We ran all the time," Shuler said. "One time we ran a Xerox Relay at Crissy Field (in San Francisco) and a half-marathon in Hayward the next day, I signed us up as a corporate team, but I didn't tell them because I knew they wouldn't want to do it. Monya and Amanda both ran 1:27 (one hour and 27 minutes) and I ran a 1:28. They were mad at me for signing them up, but we won."

Not all the events were serious competitions. The Roadrunner men and women participated in (and won) "bed races," where teams push a bed down the street as fast as possible, Bay to Breakers (the team dressed up as cows), mixed relays known as "ladder races," Lab-sponsored triathlons and "prediction" races, where runners would guess at how long it

'Bobcats, bridges, hawks above. Stately Sycamore, lots to love.'

- A poem by Jean Shuler

A poem Jean Shuler wrote for a commemorative brick to be placed in Sycamore Grove Park (above) expresses her admiration for her favored running spot. Every Sunday morning, Shuler and her friends meet up to jog at least six miles through the idyllic Livermore park. For Shuler, running in nature has become "like a spiritual experience."

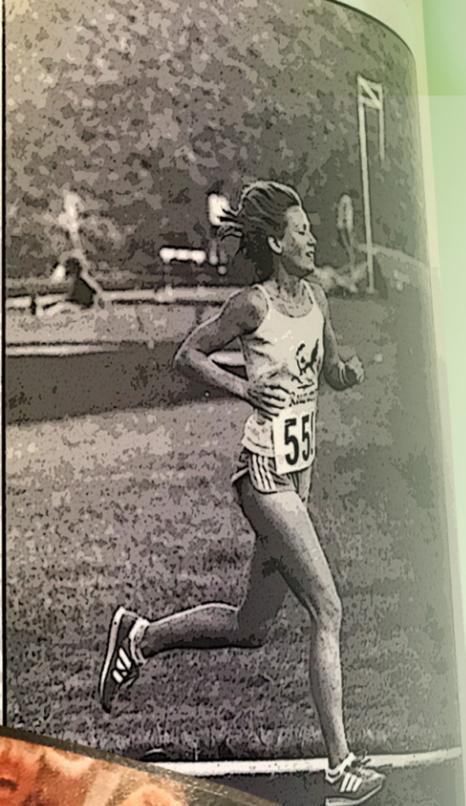


Newsline

LLL runners: Champs again in state meet

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would take for them to dash from the Lab to a local pizza parlor. Prizes would be waiting for the runners with the most accurate predictions.

One of the most fun events, Shuler says, was the “Sausalito Scramble.” Started by Lab employee Jim Wilson as a Sierra Club hike, the team turned it into a run. Starting at the Embarcadero, they would gallop across the Golden Gate Bridge to Sausalito, have lunch and take the ferry back to San Francisco. It became a tradition that would last the next 30 years.

For Shuler, running provided an avenue to socialize and enjoy a camaraderie with Lab employees outside of work. The team held birthday parties at Lake Del Valle, barbecues and met up every month for potlucks.

“We had the best time,” Shuler recalled. “It was just a group of people who loved to run. I didn’t even know what they did, we would just get out and go running. It was just fun. We’d talk about it; we’d make fun of each other. It wasn’t really about winning; it was just about getting together and doing something fun. But don’t get me wrong, we loved to win.”

And win Shuler did, taking first place in several state and local corporate events and setting a record for women over 40 in an 8½-mile race, part of the annual Livermore Marathon organized by the Lab. In 1982, she was recruited for a 24-hour relay for women over 40, where each member of the 10-person team took turns running a mile. The team set a world record, with Shuler averaging 6:26 per mile for 21 miles.

Shuler’s passion for pounding the pavement became a lifetime love affair. A perennial champion in her age group for the Livermore Valley Half-Marathon, Shuler has seven marathons to her credit and at least 40 official half-marathons, which she still runs at least once a year.

Beginning in the late 1970s, just as running was becoming a fad in the U.S., Shuler joined a Laboratory co-ed team known as the “Roadrunners.” Over the years, Shuler and her teammates would compete in, and win, numerous state, regional and Lab-sponsored events, including Corporate Cup relays, half-marathons and “bed races.”

On her 70th birthday, she ran a half-marathon in Vancouver, British Columbia. On another birthday, she did a half-marathon in Eugene, Oregon. Her favorite was the Badger Cove Half-Marathon at Lake Del Valle, a trail through the Livermore hills that she slogged through several years ago.

“It was pouring rain,” Shuler remembered. “There was so much mud, it was flying everywhere. It was just hilarious to run that race. There’s nothing better than playing in the mud.”

Shuler admittedly didn’t train for her first marathon, the 1980 San Francisco Marathon, which she ran with other Lab employees. However, she was able to break four hours, despite suffering from a stress fracture that would require her to wear a walking boot for months afterward. Her second marathon was her favorite, sprinting through the redwoods of Humboldt County’s Avenue of the Giants in the rain. She finished in 3:21 and qualified for the Boston Marathon, but “didn’t care” to run in the prestigious footrace. At the age of 50, she ran the Sacramento Marathon, finishing third for her age group — a “brutal experience” due to the wind, rain and leg cramps, she said.

‘IT’S AN ADVENTURE’

Shuler also has competed in two international marathons. While traveling for Cray User Group conferences, she happened to be in both London and Barcelona when they were holding their marathons. She ran the London Marathon in 1991 along with 35,000 other entrants, passing by Westminster Abbey, the houses of Parliament, Big Ben and running across the Tower Bridge. At age 55, she participated in the Barcelona Marathon, winding her way along the Mediterranean coast and ending on the track in Barcelona’s Olympic Stadium. Later she found out she had won her age group and received a medal in the mail.





“Marathons are a challenge to see if you can do it,” Shuler said. “Sometimes it’s in fun places and people are cheering for you. It’s kind of an adventure.”

While her marathoning days may be behind her, Shuler continues to run whenever she travels for work, her preferred way to sightsee.

“The most fun thing for me is getting up early when I’m in Tokyo or Kyoto or someplace where we’ve been and running around before the traffic starts and seeing the different sights,” Shuler said. “When we were in France, I would go out early and come back with croissants for the women, and they loved that. I like to see different places by myself and do some exploring.”

Shuler still logs more than 30 miles a week, running every day but Saturday, which is set aside for yoga and swimming. On Tuesdays, she runs about six miles from the Lab along Patterson Pass Road and on Thursdays, to Poppy Ridge with her friends Santa Maria, Patty Clemo and Cindy Heer. On Mondays, Wednesdays and Fridays, she typically joins her longtime running partner McCoy for a five-mile run.

Shuler’s co-worker, Lisa Belk, Computing’s Information Technology Operations division leader, saw firsthand how dedicated Shuler is to keeping active when she joined her on a lunchtime run several years ago.

“We start running, and she’s talking. I said, ‘Wow Jean, this is quite a pace,’ because I’m thinking I can’t keep up with her. And she says, ‘I know, I’m so slow, my foot’s broken.’ She was exactly double my age. I was humbled by her stamina and muttered, ‘Yeah that’s what I meant, you just keep going on your broken foot without me.’”

Belk called Shuler the “model of work-life balance.”

Running wasn’t just a form of exercise, but a way for Shuler to socialize with co-workers outside of the office setting. “It was just about getting together and doing something fun,” she recalled. “But don’t get me wrong, we loved to win.”

‘She’s inspirational, not just because she runs every day but because she’s a great person and she is really connected to others.’

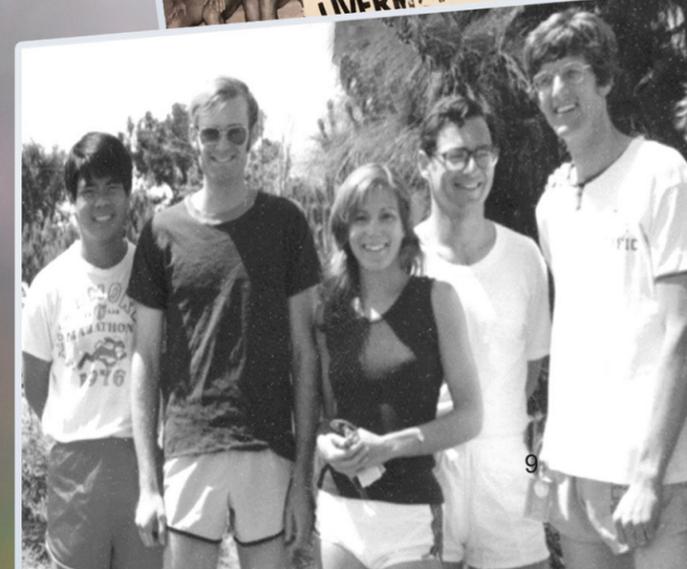
- Lisa Belk, colleague and fellow runner

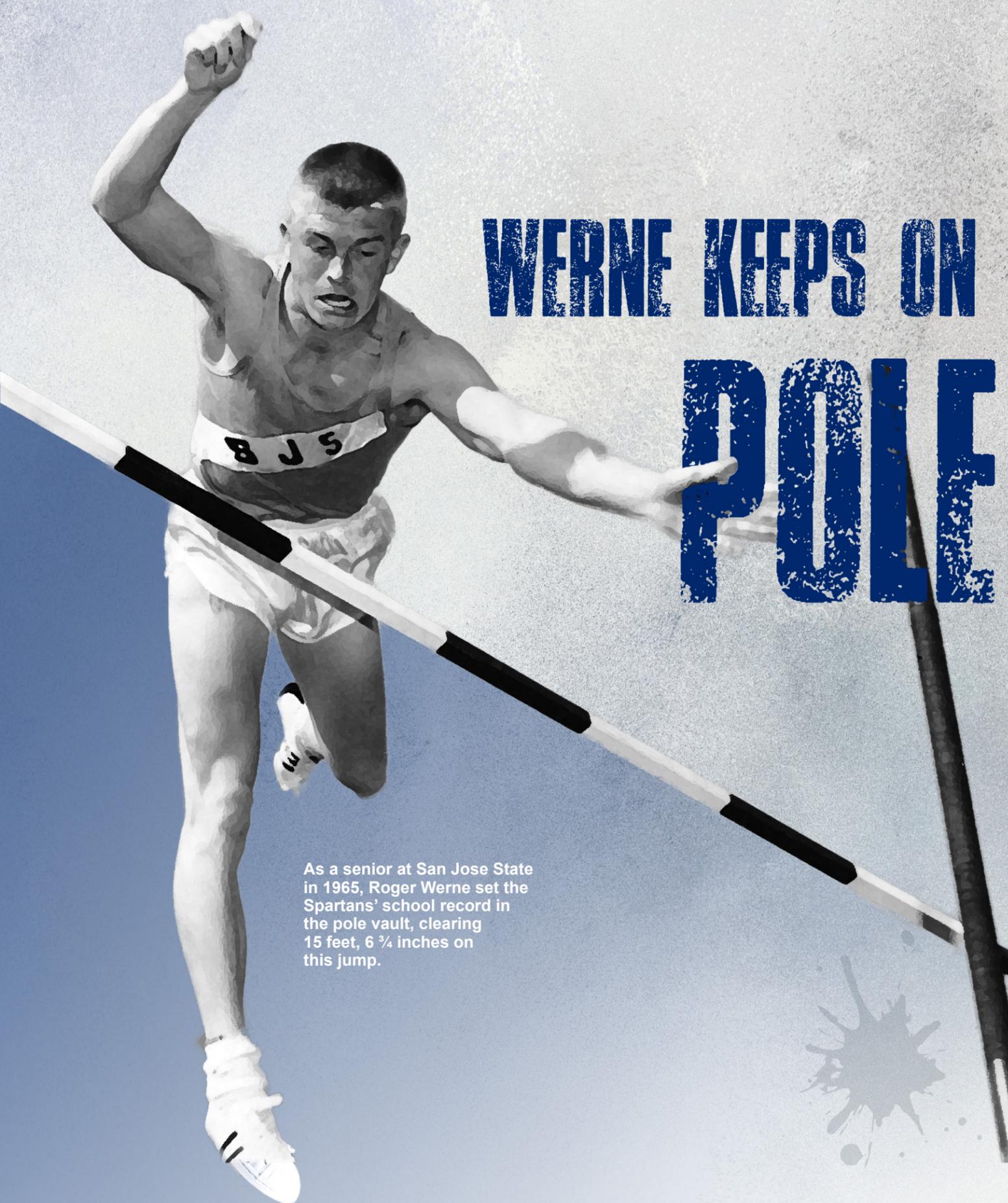
“We get so bogged down with work, but sometimes I think to myself, ‘Jean makes it out every day, I can take myself for a walk around the lake.’ She manages to fit it in, and she’s probably more productive because of it.”

Shuler would certainly agree. She considers herself fortunate to have her health and to have avoided any major injuries that would prevent her from doing what she loves. And she has no intention of stopping.

“I don’t know how people sit around at lunch time at don’t get out,” she said. “I’ve got to get outside, even if it’s just for a walk. How do you just sit in the office and not move?”

And if a doctor ever told her to give it up? “I’d completely ignore them,” she insisted, with a chuckle.





WERNE KEEPS ON

POLE VAULTING

BY STEVE WAMPLER/LLNL

As a senior at San Jose State in 1965, Roger Werne set the Spartans' school record in the pole vault, clearing 15 feet, 6 ¾ inches on this jump.

W

hen he was 14, Roger Werne took up pole vaulting, a track and field event in which he has been among the nation's best age-group athletes for a good part of his life.

In 1958, as a freshman at Los Gatos High School, Werne and another boy were two of the smaller youths in their class.

"The other kid and I were both cut from the basketball team because we were too short," Werne recalls, laughing at the memory.

"We both went out for track and he took up pole vaulting before I did. I looked at him and said to myself, 'I can beat him.' And I did. After a while, he quit pole vaulting and I never did."

Even today at age 76, more than six decades after he started, Werne continues to pole vault, doing so once a week during the school year and twice a week during the summer.

Now a senior adviser to the director of the Lab's Innovation and Partnerships Office, Werne didn't only beat his fellow freshman in pole vaulting, he later became one of the nation's top high school vaulters in 1962.

As a senior, Werne set the Los Gatos High School record at 13 feet 6 inches, which stood for about a decade, and he was ranked as the 19th best high school pole vaulter in the nation.

When it was time for Werne to enter college, he decided to stay local.

"San Jose State had the best track team in the country and they had a good engineering school, so I started there at age 17."

Throughout Werne's four years at San Jose, the Spartans track team under coach Bud Winter was ranked as one of the top three teams in the nation. "San Jose State was called 'speed city' at that time because they had the fastest sprinters in the world," Werne said.

Some of Werne's Spartan track teammates included Tommie Smith and John Carlos, the then-controversial gold and bronze medalists in the 220-yard dash in the 1968 Mexico City Olympics; and Lee Evans, the 440-yard dash gold medalist.

"It was great; it was fun. I enjoyed competing in intercollegiate track and field."

During Werne's senior year at San Jose State, he set the Spartans' record in the pole vault, clearing 15 feet, 6 3/4 inches, about 18 inches shy of the world record in 1965. At that time, he was ranked as the No. 8 intercollegiate pole vaulter in the country.

The thought of trying to qualify for the U.S. Olympic team crossed his mind. But Werne said he was too young for the 1960 Rome Olympics, was injured just before the 1964 Tokyo games and didn't have a way to make money and pole vault to prepare for the 1968 Mexico City Olympics.

"I eventually figured out that you couldn't do pole vaulting for a living, so I decided that it was time to become a good student."

Werne buckled down, earning bachelor's and master's degrees in civil and structural engineering from San Jose State and later picking up his Ph.D., also in civil and structural engineering, from the University of California, Berkeley.

In addition to securing his education, Werne married, started a family and joined LLNL as a mechanical engineer in 1974, putting his pole vaulting life into a 17-year hiatus.

After he turned 40, Werne decided he wanted to return to his favorite track and field event. It wasn't a total surprise because as his wife Lani puts it, he has two passions in life — his family and vaulting.

Looking back at his decision to resume pole vaulting, with a twinkle in his eye, Werne calls the decision "middle-age crazy."

"I had always stayed in shape. When I made the decision that I wanted to return to pole vaulting, I decided I'd coach high school, so I would have a place to vault."

For the past 36 years, Werne has worked his job as a Lab employee, coached the male and female pole vaulters at San Ramon Valley High School and pole vaulted himself.

Over the years Werne has become something of an institution at the San Ramon high school. Teachers, students, principals, track coaches and others have come and gone, but he has remained.

"It's my hobby. I enjoy it and coaching is my way of giving back to the community. Pole vaulting teaches the athletes a life discipline — how to work at something and accept success or failure because the crossbar either stays up or it doesn't."

Coaching also offers Werne the chance to influence athletes toward possible careers in science and technology. Each year, he takes his graduating seniors on a tour through the Lab's National Ignition Facility.

"One student that I coached 10 years ago just told me that he had graduated with a Ph.D. in physics from UCLA. He said his interest in fusion physics was triggered by his NIF tour," Werne said.

Before this year's season was interrupted by the COVID-19 pandemic, Werne was coaching 30 San Ramon Valley High School pole vaulters — 20 girls and 10 boys. Under Werne, the school's boys' record is 16 feet, 7 inches and the girls' school record is 11 feet, 9 inches.

To stay in shape, and to bolster his pole-vaulting strength, Werne hits the gym three times a week for running and weightlifting.

In his more than 60 years of pole vaulting, he has incurred two injuries — an injured leg, which was stabbed by a broken pole and a broken wrist, when he missed the pit.

He has broken 17 poles, 14 during his college career, at the beginning of the fiberglass era, when the poles weren't as durable as today's.

Now competing in the master's class (ages 75-79), Werne has posted some of the best age-group records

of his life. In a July 2019 all-comers meet at his high school alma mater, Werne hit 8 feet, 6 inches, good enough for a No. 3 ranking in the U.S. and a No. 6 ranking in the world in his age bracket.

"There's a fraternity of master pole vaulters in the Bay Area and, for that matter, all over the country. I know all of the pole vaulters and we have a good time together. The community, both coaches and athletes, is tight-knit around the country," Werne said.

After joining the Lab in 1974 as a mechanical engineer, Werne was tapped to be the Lab's associate director for Engineering, a position he held from 1988 to 1995.

He left the Laboratory for five years to work for a startup medical device company. Werne returned to LLNL in 2000 and worked for six years in the Nonproliferation, Arms Control and International Security (NAI) Directorate, the forerunner to Global Security, before becoming the deputy director for the Innovation and Partnerships Office until 2019.

Looking ahead, Werne has a plan for continuing his pole vault career.

"At age 100, I'm planning to set the age-group world record for the pole vault. No one has ever cleared any height at age 100 in the pole vault."

In 24 years, he's hoping to be ready.

LLNL's Roger Werne, who has coached pole vaulting at San Ramon Valley High School for 36 years, heads down the runway for another vault in 2008. Now 76, he pole vaults once a week during the school year and twice a week during the summer.

'It's my hobby. I enjoy it and coaching is my way of giving back to the community.'

- Roger Werne

Need FOR Speed

BY NOLAN O'BRIEN/LLNL



Many seniors slow down as they get older, taking time to appreciate the finer things in life. Not Don Smith. He wants to go just a little bit faster than last year. His need for speed isn't a death wish. It's what makes him feel alive.

The retired LLNL physicist turns 80 in July. His goal this year: compete in 33 downhill ski races, win a majority of them and add another 30 days of gate training to improve his skills. Similar to the diligent preparation he undertook as a diagnostic lead on multiple underground nuclear tests in the 1970s and '80s, he knows that repetition on a downhill ski route will foster instinctual reaction and help hone his form.

"I'm still racing about as well as I ever have," Smith said. "The keys are: work hard to stay in shape and don't ever stop. I've torn both ACLs, broken a vertebra and have been knocked unconscious. Fortunately, I've had good recoveries from all of those injuries. I've known racers who have died on the mountain, and four others who were still competing at age 91. I hope to keep going for a while yet."

HUMBLE BEGINNINGS

Smith has been enamored with ski racing since he was 19 years old, the year Squaw Valley hosted the Winter Olympics in 1960. He didn't have access to a television at the time, but he was hooked. To this day, he can recite the names of competitors that year. He grew up on a farm in Pennsylvania and didn't have access to equipment, so he fashioned a pair of skis out of the wood staves from an old vinegar barrel. They didn't work. With limited access to equipment and few good options for ski resorts in the area, it wasn't until he was hired at the Lab in 1964 that he was presented a real opportunity to learn.



By 1975, he was introduced to the U.S. Masters Ski Racing Program, which provides competitive alpine ski races for adults of all ages. At the time he was an up-and-coming physicist at LLNL and the father of a young family. His children weren't interested in watching their dad go ski racing, and underground tests in Nevada couldn't be run from the mountains. He was hooked on racing, but for the next 15 years, he was content with weekend trips to the Sierra Nevada about once a year.

By 1991, his children were about to depart for college, and he was recently divorced. Smith took it to the next level. He enrolled in the masters training program at Squaw Valley, something he has participated in every year since. He

also travels to Mount Hood in Oregon every August for summer race training on the Palmer Glacier.

FACING OFF WITH AN OLYMPIAN

When asked if he has any racing photos, Smith pulls up a gallery of images from a race four days earlier at Mount Rose. He immediately leans into the screen, examining the form and technique of each competitor, taking rough measurements of their outer leg angle.

"Subtle differences can change your time significantly," Smith said. "You need practice to improve at this sport. We all commiserate about how this is the hardest sport to improve at that we've come across."

Smith's favorite event was a downhill race held annually for many years at a small resort called Soldier Mountain in the hills above the village of Fairfield, Idaho. With the mountain closed to the public Monday through Wednesday, the racers had the entire resort to themselves. Monday was always a training day. Tuesday was set aside for timed runs and Wednesday featured two masters races. In the early years of the event, U.S. World Cup and Olympic downhiller Kenny Corrock was the race organizer and head coach.

"There are only two lifts on the mountain, but the run covers a huge vertical drop," Smith said. "It was the longest, most challenging masters downhill that I know of."

He participated in all of the Soldier Mountain downhills from 2003 to 2017, but 2004 was the most memorable. That year, the racers were able to get nine training runs on Monday, and two more training runs and a timed run on Tuesday. All that training paid big dividends when the competition began on Wednesday.

In the first race, Smith had the fastest time of all the competitors over the age of 60, taking about 10 seconds off his prior years' times. Included in that age group was 68-year-old Marvin Melville, who had raced downhill in the 1960 Olympics for the U.S. team. In the second race of the 2004 Soldier Mountain event, Melville edged out Smith for top honors in the over-60 group. Their times compared well with racers who were 20 and 30 years younger.

"I had more confidence during that race than I had ever experienced," Smith said, getting up from his

chair to demonstrate his form. "The start gate was on top of a 15-foot mound of snow at the very top of the mountain. The view was spectacular. Diving out of the start took a little nerve.

"There are so many features in the course: long sweeping turns, large steep drops, compressions and bumps that send you flying. One of the larger features was 'Easter bump.' Racers around my time were clearing 100 feet in the air off Easter bump."

'THAT'S A GOOD WAY TO GO'

Flying downhill — and through the air — on skis doesn't always end well, however. It's rare, even at the highest levels, that a racer doesn't have serious injuries that impact their abilities and longevity. Despite his penchant for preparation, Smith has been through his share of tumbles.

Smith's worst crash took place in a downhill in Colorado in 2001. He was coming out of a turn a little low and a little late at the bottom of the steepest pitch, and he tried to get back on line using minimal edge pressure. The next thing he remembers is waking up in the first aid room at the lodge. He had been unconscious for an hour and a half.

According to the accident report, he had caught an edge, which diverted him sharply off course into the safety fencing at top speed. He was transported to a Denver hospital where it was determined that he had fractured a vertebra and dissected a vertebral artery. When Smith retells the story, he draws on his physics background, calculating that he received 30 years worth of radiation from the various X-rays and seven upper-body CAT scans in his 15 days at the hospital and the three months of treatment that followed.

The experience was a real scare for Smith. He knows multiple people who have died skiing. However, he notes most skiers live very long, fulfilling lives. As he went through rehab to get his body back in shape, it was never a question if he should continue to pursue one of his true loves. It was just a question of how soon.

"I don't particularly like other versions of speed," Smith said. "I don't drive fast on the freeway. I've never felt like I wanted a motorbike, and I've never done skydiving. But downhill racing makes me feel alive. My friend Harold Wescott died of a heart attack at around 85 years old during a downhill race. He was three gates above the finish line. If you ask me, that's a good way to go."

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