

The Pacesetter

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A fitting 50 Record performances, special memories mark golden marathon



Past champs and honored guests recognized at the awards assembly following the running of the 50th Brookings Marathon are, from left, Randy Fischer, five-time champion and race record holder; Josh Monson, 2018 champ; Jill Moncur, three times women's champion; Tim Fryer, 2014 champion; Scott Weispfennig, 2016 champion; Steve Wilson, 1999 and 2003 champion; Bob Bartling, participant in the inaugural run in 1970; Lyle Clausen, 1978 champion; Kathy Magnuson, first female finisher; Mike Dunlap, 1980 champion; Greg Uecker, 2008 champion; Erica Knips, 2017 and 2019 champion; and Heather Himler, 2014 champion.

By Dave Graves
Newsletter editor

Six and one-half hours after it began, the last runner crossed the finish line in the 50th running of the Brookings Marathon May 11. It couldn't have been more appropriate that the person who spent the longest time on the course also was the person who has spent the most years on the course — Jerry Brown, 68, of West Saint Paul, Minn.

For Brown, it was Brookings Marathon No. 28 — all consecutive — by far the longest streak and most finishes of any runner in the race's history.

There to greet him was Matt Bien, race director since 2007. "Just an incredible streak. So great to have him back. For the past few years, his race number has matched the number of years he has run our event," Bien said.

Dedication has been a byword for the 25th oldest marathon in the United States (14th oldest continuously run marathon) since Jay Dirksen and his colleagues staged the first race June 21, 1970. That has carried through with Bien, his committee and the hundreds of volunteers who show up on race day to direct and aid the runners.

Kenyan claims 26.2 crown

This year's field of runners was one

of the best in years and the largest field since 2013.

The marathon winner, Geoffrey Terer, 42, of Colorado Springs, topped the field of 188 with a time of 2:30:47, which was the fastest time since Randy Fischer's second Brookings Marathon win Nov. 1, 1981 (2:24:35, 5:28 pace). Terer ran at 5:46. His time ranks 10th overall behind Fischer's record 2:23:29 (1979) and eight other marks in the 1970s and early 1980s.

A native of Kenya, Terer has been in the United States since 2012. He lives with friends and dedicates himself to training — his current goal is a top New York City Marathon time.

In May, he did his training on race courses. On May 4, he finished second at the competitive Lincoln (Neb.) Marathon with a time of 2:27:04. He was a late entry in Brookings, waiting to see how he would recover from Lincoln. Bien then granted the elite runner a late comp entry. On May 18, he finished Fargo in fourth (2:30:30) despite having his shoes become untied three times.

In February, Terer represented Kenya at the All Africa Masters Championship in Tunisia, winning the 10K and half-marathon.

So why, with that resume, would Terer drive 750 miles the day before, to race in Brookings, which offers only a

\$150 winner's check? He explained that he had never run in South Dakota before and felt he could claim the masters record, which stood at 2:32:37. That was set by 2003 winner Steve Wilson, then age 44.

New, past record holders meet

Wilson was actually entered in this year's race as Bien offered free entry to all former champions. Wilson was among a handful who accepted.

Wilson hadn't seriously run since an injury in August 2003, but was using the 50th Brookings Marathon as motivation to get back to the sport. A bruised heel late in this spring's training set back his running and stopped him after seven miles on May 11. However, he was at the finish line to witness Terer break his mark and congratulated him afterwards.

Terer said he got a lot of that.

"The Brookings Marathon is a small event but a well-organized event. How people treat you makes you feel like going back again. After finishing most of the people greeted me, congratulated me. That makes you want to come back. The community really gave me a warm welcome," said Terer, who has run more than 20 marathons and 100 half marathons.

See Marathon, Page 2

Marathon: Half champ eyes Olympic Trials

Continued from Page 1

Stoltenburg claims half marathon record

The women's half marathon record also was broken at 50th Brookings Marathon.

Tessa Stoltenburg, a 24-year-old Sioux Falls runner, didn't just break the record, she shattered it. Stoltenburg, originally of Watertown, clocked a 1:18:38 to burst the old mark by four minutes (Heather McGill, East Grand Forks, Minn., 1:22:40, 2015). She also chopped a minute off her own personal record.

For Stoltenburg, it was redemption from this year's Boston Marathon, where she entered with plans for a 2:40 and finished in 3:01.

In the nearly four weeks between Boston and Brookings she had good recovery and a couple good workouts, so Stoltenburg thought a 6:10 pace would feel comfortable. That calculates to a 1:20:50, still well below the record she was eyeing. Turns out 6:00 was comfortable as temperatures were mild and the half-marathoners didn't have the exposure to the south wind that hit marathoners later in the morning.

Good to be back in Brookings

Stoltenburg ran by herself from the start and finished fourth overall out of 355 runners. She was only 31 seconds behind last year's marathon winner.

"I loved the course. It's so fun to go back on campus and run the streets I ran when in college," who ran briefly at SDSU but broke her femur her sophomore year and took a year off running in 2014. She returned to running as a citizen runner with the aim of running a marathon. She found she was faster than she had ever been.

"My marathon pace was faster than my 5Ks were in college," said Stoltenburg, who had hoped to defend her Fargo Half Marathon title the next week.

Stoltenburg ran even faster there (1:17:43, just seven seconds shy of the race record). But was topped by Maddie Van Beek (1:14:58, 5:43 pace), a North Dakota State University record holder and MVP of the Summit League Indoor Track Championship in 2013.

Stoltenburg's goal is to qualify for the 2020 U.S. Olympic Marathon Trials, which requires a 2:45. She will shoot for that at the Chicago Marathon in October.

'Every mile is a gift'

Of course, for the vast majority of those running the Brookings Marathon, the goals are less lofty, but nonetheless



Steve Wilson, left, of Lafayette, Ind., was making only his third trip to Brookings, but was at the finish line when Geoffrey Terer, of Colorado Springs, completed his first South Dakota race. Wilson set the masters mark at the Brookings Marathon when he won the race in 1999 and 2003. Terer broke the mark in winning the 2019 event.

significant, like the Toomeys of Watertown. Tim, 52, trained with his wife, Cheri, 49, so she could run her first half marathon. They celebrated 28 years of marriage May 10 and started year 29 by both completing the half marathon.

Such inspirational accounts could go on and on. In many cases they did — at the Nine in downtown Brookings, where flocks of race participants, families and friends gathered for jazz, ice cream and 50th birthday cake. But mostly for stories. Stories about this year's race. Stories about races years ago. And stories about the gift of running.

Quote running author Amby Burfoot, "This I know for sure. Every run is a new adventure. Every mile is a gift."

Runners at the Brookings Marathon have been unwrapping 26 gifts every year since 1970. May 11 offered a chance to reflect and give thanks for 50 years of great memories.

Wanted: Brookings Marathon photos

The Brookings Marathon (formerly Longest Day Marathon) celebrated 50 years May 11. A history book with finish times, past champions, stories and photos is being compiled to commemorate this milestone.

We have a very limited collection of photos prior to 2005. You can help us by sending your photos from race days gone by. We welcome photos from any year, and especially need those from the '70s, '80s and '90s.

If you have a photo to share, please contact race director Matt Bien at run@brookingsmarathon.com.

We are happy to scan photos for you if you live in the Brookings area. Otherwise, send a high-resolution scan of your photo as an attachment to the same email address (JPEG format preferred).

2019 Brookings Marathon stats

Marathon: 188 started, 183 finished
(99males/84females)

Half: 355 started, 350 finished (121m/229f)

Relays: 48 teams (six per team)

Scotty Roberts 5K: 52

Total runners: 843

Brookings Marathon all-time top 20

		Time	Pace
1.	Randy Fischer	1979	2:23:29 5:28
2.	Mike Dunlap	1980	2:23:34 5:29
3.	Randy Fischer	1981	2:24:35 5:31
4.	Michael Seaman	1974	2:25:42 5:33
5.	Mark Stanforth	1976	2:25:43 5:33
6.	Duane Millslagle	1980	2:25:57 5:34
7.	Randy Fischer	1980	2:26:02 5:34
8.	Duane Millslagle	1981	2:29:12 5:41
9.	Dave Erler	1974	2:29:14 5:42
10.	Geoffrey Terer	2019	2:30:47 5:45
11.	Stan Zegotarski	1979	2:30:59 5:46
12.	Cliff Karthaus	1973	2:31:34 5:47
13.	Duane Millslagle	1983	2:32:02 5:48
14.	Steve Wilson	2003	2:32:37 5:49
15.	Ken Keehn	1975	2:32:59 5:50
16.	Bill Field	1998	2:33:09 5:50
17.	Randy Fischer	1982	2:33:31 5:51
18.	Kevin Osborn	1988	2:35:11 5:55
19.	Benjamin Bocher	2004	2:35:15 5:55
20.	Bob Fitch	1980	2:35:27 5:56

Behind the scenes

Creating dry path for runners required last-minute heroics



LEFT: It would have been a long swim for runners in the Brookings Marathon to reach the bridge in the background after Six-Mile Creek flooded out of its banks two days before the race. **ABOVE:** So on Friday the city Parks and Recreation Department built an extension to the original bridge.

By Dave Graves
Newsletter editor

Brookings Marathon 2019 was a milestone year for more reasons than the 50th running of the 25th oldest marathon in the United States.

The combination of road construction and a 2.25-inch downpour a couple days before the May 11 event created headaches for race organizers, even if they weren't witnessed by the 900 runners (marathon, half marathon and relay) who took to the city's streets and bike paths on a fine Saturday morning.

"Literally less than 24 hours prior to race time, three areas of the course were

impassable. Not less than perfect...impassable," veteran race director Matt Bien said.

One trouble spot was expected. Runners cross a section of 22nd Avenue en route to Mile 8. The road was torn up due to an extended construction project.

Jeff Cooley, lead engineer at Civil Design Inc., oversaw building of a solid gravel path across the hole in the ground at 22nd and Minnesota. "Finished at 2 p.m. Friday," Bien said.

The Wednesday night downpour that hit the region left Sexauer Park flooded on Thursday. The approach to the bridge over Six-Mile Creek was only a few inches underwater that morning, but by the afternoon upstream flow left the approach a foot underwater. Bien wondered if he would need to reroute the certified route.

"We had cones laid out for a re-route and didn't make the call on using the

original route until 3 p.m. Friday. Many thanks to the Park and Rec Department (Allen Kruse, Josh Bauman, Pat Amman) who spent hours on Friday building a wooden extension bridge in Sexauer to span the flooding," said Bien, noting the situation was much worse than the 2008 race that was run in a downpour.

"Finally, hats off to Indian Hills Homeowners Association President Jacob Mills for continuously sump pumping the tunnel in Indian Hills for 36 hours prior to race time to ensure runners a dry path through what had been six inches of water," Bien said.

He added, "Ironically, the winning co-ed relay team (Mediocre At Best) included both Jeff Cooley and Jacob Mills, each running their leg of the relay through the areas of the course that they 'saved' just a few hours prior to the starting gun."

Prairie Striders to mark 50 years

Prairie Striders Running Club held its organizational meeting Sept. 12, 1969, in the basement of the Barn on the campus of South Dakota State University.

So it is appropriate that South Dakota's first running club hold its 50th birthday observance just a short sprint from that inaugural meeting. The event will be held from 11 a.m. to 1 p.m. Saturday, Sept. 28, in the South Dakota Art Museum. That will follow the 57th running of the Jack 15 road race from White to the Campanile, also nearby on campus.

Cake and SDSU ice cream will be served in the art gallery while the program and awards from the Jack 15 will be in the downstairs auditorium.

The program will be in question-answer format with an



emcee and leaders from Prairie Striders past as well as more recent years. There also will be an opportunity to socialize and drawings for door prizes. Dave Graves, club president, welcomes not only current and past Striders but also members from the community who would like to connect with other runners.

Nancy Scholl, vice president, is coordinating the event and is soliciting volunteers for the day since she also will be running the Jack 15.

Photos related to Prairie Striders history also are welcomed. For more information, email run@prairiestriders.net or call Graves at 627-5718.

Prairie Striders trivia quiz

Who was the club's first president?

Who was the club's first female president?

See Page 5 for answers.

Prairie Striders
officers
2019-20

President — Dave Graves
Vice president — Nancy Scholl
Secretary/webmaster — Trevor Penning
Treasurer — Jay Larsen
Web address — www.prairiestriders.net
Also follow us on Facebook

Triathletes take their talent indoors

By Dave Graves
Newsletter editor

Competitors in the “I’m Ready for Summer” Triathlon may have been ready for summer, but winter wasn’t ready to yield the stage to these sun-seeking athletes.

Brookings received a couple of inches of snowy slush, temperatures in the mid-30s and a 10 mph northeast wind Saturday morning, April 27. Not the worst pill it has served us this year, but not the conditions to have people racing around on bikes. So the 19th annual triathlon, organized by SDSU Wellness Center and co-sponsored by Prairie Striders Running Club, was moved inside.

Thanks to advance forecasting, race director Shari Landmark was able to make the call Thursday afternoon.

“We apologize for the inconvenience, however, safety is our top priority,” Landmark said in an email to 105 participants who were registered. Moving the event inside the Wellness Center did mean for a hit in participation. About 30 people opted to do their biking on a stationary bike and their running on the treadmill.

Those who did make the trip to campus—including two Iowans who drove six hours Friday—appreciated the chance to compete.

“I thought it went really well,” said Chuck Harming of Elkton, who added that he would “absolutely” do another indoor triathlon. He had done a couple outdoor triathlons and thought the revised version for the indoor event was fine. Rather than record a time to cover a fixed distance, the time was fixed and participants tried to log as many miles as possible.

There was 10 minutes of swimming, 30 minutes of biking and 20 minutes of running with a 10-minute transmission after swimming and five minutes after biking.

Winners from Omaha, Iowa

The overall winners were Jon Gouger, a freshman swimmer at SDSU from Omaha, Neb., and Cat Campbell Currier, of Toledo, Iowa, with 22.835 and 18.31 miles, respectively.

Currier and her friend, Rachel Bly, 47, of Grinnell, Iowa, are on a quest to compete in 50 triathlons in 50 states. This is their third year on the project and are now at 19. “We were thrilled” to hear the triathlon would be held inside. “We didn’t want to cancel and we weren’t looking forward to biking in this weather,” said Currier, who won her first overall title.

“I was shocked I got first. We’re all about finishing,” she said.

Currier also praised the organized effort. “Everything was great. The locker room, the towels, the food. The volunteers were very helpful. Communication (before the race) was good. I emailed a couple times and always got a response. It was just great,” she said.

Event opened SD tri season

Age group winner Glenn Voss, 59, of Sioux Falls, was equally complimentary.

“The staff here did an incredible job turning a bad weather event into a way for people to challenge themselves and every year it’s windy outside,” said Voss, who has competed in the “I’m Ready for Summer” Triathlon a half-dozen times. Friend Kirby Shroll, 61, of Sioux Falls, added, “It’s a good one to start the season.”

The Brookings event is the first in this year’s South Dakota Tri News series. An April 14 triathlon in Aberdeen was canceled because of weather.

Shroll said, “It’s always better to be outside,” but he added he never thought of skipping when it moved inside. Voss noted, “I had a great run. I don’t run an 8-minute pace very often.”



The overall winners at the 19th annual “I’m Ready for Summer” Triathlon at the SDSU Wellness Center are Cat Campbell Currier, left, and Jon Gouger. A snowy morning April 27 forced the event indoors.

‘Better to race than not race’

Dan Scholl, a member of Sprinters, the winning team entry, “I was really set to ride my bike on the road, but I’m glad to race. Better to race than not race.” He noted that he tried to keep up with the cadence of his competitors and the technique worked quite well as he completed 19.3 miles in his half-hour on the stationary bike.

Kids division winner Shane Harming, 11, of Elkton, said, “I was looking forward to doing this outside, but it made it more interesting this way.” Harming explained that was because all 10 participants transitioned in a group to the next stage.

The win was a fitting finish to “a few months of training,” he said. Dad Chuck Harming noted the family would come into Brookings a few times a week, particularly to train for swimming and running.

The kids swam five minutes, biked 15 minutes and ran 10 times. Harming covered 5.175 miles.

When the young Harming had completed his 30-minute workout, “I wanted to fall asleep.”

The 20th annual “I’m Ready for Summer” Triathlon is April 25, 2020.

Age group winners

18-29: Jon Gouger, Omaha, Neb., 22.835 miles; and Maria Steblay, Brookings, 17.984 miles;

30-39: Jake Jass, Hartford, 20.641 miles; and Sara Nelson, Sioux Falls, 15.254 miles;

40-40: Kyle Everson, Aberdeen, 22.19 miles; and Rachel Bly, Grinnell, Iowa, 15.681 miles;

50-59: Glenn Voss, Sioux Falls, 20.9 miles; Cat Campbell Currier, Toledo, Iowa, 18.31 miles;

60-69: Kirby Shroll, Sioux Falls, 17.431 miles; no female entries.

Team: Sprinters — Kaya Houborg, swim, Dan Scholl, bike; Nancy Scholl, run, all of Brookings.

Youth: Shane Harming, 11, Elkton, 5.655 miles.

2019 Prairie Striders remaining race schedule

Longest Day 10K Saturday, June 15


Beef and Eggs 5K Saturday, July 13

Predictor Mile Wednesday, Aug. 7

Oakwood Lakes Trail Run Saturday, Aug. 10

Jack 15 Saturday, Sept. 28

Hobo Day 5K Saturday, Oct. 5

 Between newsletters, you can keep up on Prairie Striders news through Facebook.

Also, the club’s minutes are posted on our webpage — prairiestriders.net—under club information.

Ekern receives 25-year coaching award

Paul Ekern of White received a 25-year coaching award at halftime of the second semifinal night game at the Class B girls' basketball tournament in Huron March 9.

Ekern is a 1978 graduate of Deubrook High School and a 1983 graduate Dakota Wesleyan University. He began his coaching career as a student men's and women's assistant cross country coach while he was competing in cross country at Dakota Wesleyan University.

He was a student men's and women's assistant in indoor track and field at Dakota Wesleyan University and then an assistant boy's and girl's track and field coach at Mitchell High School while he was student teaching. He was also a graduate assistant in men's and women's cross country and men's and women's track and field at South Dakota State University for two years.

Ekern was the head boy's and girl's cross country and head boy's and girl's track and field coach at Deubrook High School for one year and then began coaching at Dakota Wesleyan University, where he was the head men's and women's cross country coach for 12 years, head men's and women's track and field coach for 5 years, assistant men's and women's cross country coach for 1 year and assistant men's and women's track and field coach for 8 years.

Ekern has been the assistant boy's and girl's cross country coach at Deubrook Area Schools for the past nine years and the assistant boy's and girl's track and field coach at Deubrook Area Schools for the past five years.

While coaching at Dakota Wesleyan University he coached or recruited 13 NAIA track and field All-Americans, one NAIA cross country All-American, six NAIA Academic All-Americans and track and field athletes established 60 school records.

He was named the 2000 SDIC Men's Indoor Track and Field Coach of the Year and the 2001 South Dakota Track/Cross Country Coaches Association College Co-coach of the Year.

As an assistant at Deubrook Area over the past nine years he has been on the staff that has placed sixth, third and state



Photo by Paul Nepodal

Paul Ekern receives a 25-year coaching award from Jo Auch, assistant executive director of the South Dakota High School Activities Association, at the at the girls' Class B state basketball tournament March 9 in Huron.

champions in girls' cross country and second and the past three state champions in girl's track and field.

"I have been blessed to be associated with many outstanding coaches and student-athletes over the past 25 years," said Ekern.

Editor's note: Ekern is co-director of the Jack 15 Road Race, which has started in his hometown since 1963.

Strider snippets

Scholarship winner graduates



Berzonsky

Best wishes are extended to Emily Berzonsky, who graduated from SDSU May 4. The four-year letter winner on the Jackrabbit cross country and track teams has been the recipient of the Prairie Striders / Phil LaVallee Memorial Scholarship for the past three years.

The club began awarding the scholarship in 2014-15 with Laura Lawton the first recipient. Connor Branick was the 2015-16 recipient.

The scholarship is currently valued at \$1,000 annually. However, the club is wrapping up a fundraising effort to up its value to \$3,000 annually by creating a \$75,000 endowment. Giving currently stands at \$73,488.

Anyone wishing to provide a final push may mail checks to Prairie Striders at Box 504, Brookings SD 57006 or give online through the SDSU Foundation at www.sdstatefoundation.org/lavallee-scholarship-for-athletics.

Berzonsky, a distance runner with a penchant for writing, often lent a hand

with this newsletter and edited one issue as a part of her Honors College work.

Changes planned for Longest Day

Prairie Striders Running Club will still offer one of the few 10K races in the region but a relay option is being added, race director Chris Gruenhagen said.

Also, the event is moving from a Friday evening to Saturday morning. This year's race is 8 a.m. June 15 with a free 400-meter kids run at 7:45 a.m. The race will still start and finish at the Fishback Soccer Complex near the intersection of Medary Avenue and 20th Street South. Cost is \$25 per team or individual through June 8 with the price rising to \$30 through 7:30 a.m. race morning.

Relay teams can choose a two- or four-runner option with exchanges at 1.5 or 3.1 miles. The course primarily uses the Brookings bike path.

Online registration is available through allsportcentral.com. More information is available at prairiestriders.net or by contacting Gruenhagen at chris.gruenhagen@k12.sd.us or 691-3954.

Run Crazy Horse offering discount

Organizers of the Crazy Horse Marathon, Half Marathon and Relay are offering a \$10 discount to the Oct. 6

event for Prairie Strider members.

The Run Crazy Horse Marathon events begin in the shadow of the world's largest mountain carving, Crazy Horse Memorial, and finishes in the heart of the Black Hills — Hill City. It is a walker-friendly course with the finish line open seven hours, however, neither strollers or pets are permitted.

The code "Runcrazyhorse19" is valid through Sept. 29. Register at https://secure.getmeregistered.com/get_information.php?event_id=131193.

New life members listed

Prairie Striders thanks the following, who became life members this year through a donation of \$100 or more.

February 2019

Andy Carlson, Mandy Orth, Marcel Thielke and James Thvedt, all of Brookings;

March 2019

Peder Solberg, White Bear Lake, Minn., and Kaylyn Gutormson, Bruce

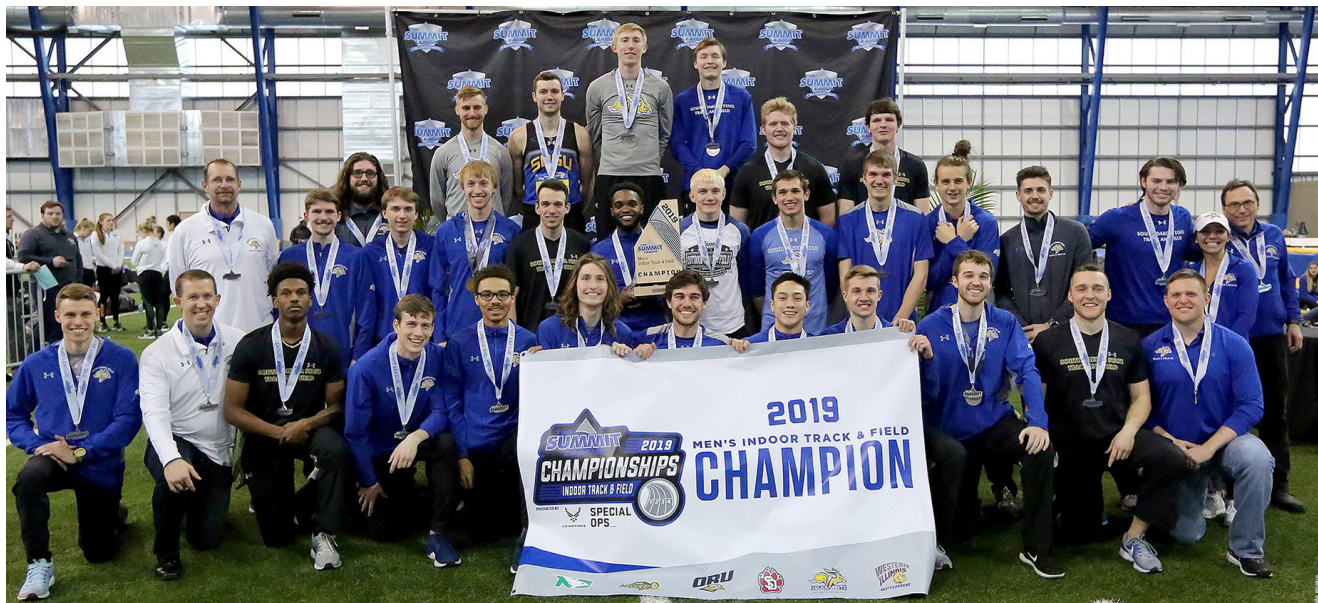
Answers from Page 3

Bob Bartling served as the first president in 1970. He then became treasurer for many decades.

The first female president was Lou Eggebraaten in 1980-81. The only other female president was Shari Landmark, 2010-12.

There have been 17 presidents. 5

A year of excellence for the Jackrabbits



The 2018-19 Jackrabbit cross country/track seasons has truly been unprecedented in its Division I history.

Pictured above is the men's indoor team, which was the first Jackrabbit team to win an indoor conference crown since 1991 and the guys did it on their home turf.

The men's cross country team won the conference title for the third consecutive year and Rod DeHaven was named coach of the year.

In the outdoor season, the men fin-

ished as runners-up to North Dakota State.

Leading the way was senior Kyle Burdick, who became the only Summit League athlete to win three championship track MVP honors.

He was among 11 Jackrabbits (male and female) who qualified in 12 events for the NCAA West Prelims in Sacramento, California.

From that meet, SDSU qualified two entries to the NCAA Championships in Austin, Texas, June 5-8. It is the first

time for SDSU to have more than one qualifier.

The entries are Rachel King in the 3K steeplechase and 4x100-meter relay team of Emmanuel Phoulom-Smith, Coby Hilton, Daniel Clarke and Sam Zenner. They are the first SDSU relay team to qualify for nationals.

On top of that, 14 school records were set by the men (three indoor, five outdoor) and women (three indoor, three outdoor).

Step it up: Does running cadence matter? Not as much as previously thought

Newswise — ANN ARBOR--Contrary to long-standing popular belief, running at a prescribed, one-size-fits-all "optimal" cadence doesn't play as big a role in speed and efficiency as once thought.

Since the 1980s, when running coach Jack Daniels noted that the step rate for runners in the 1984 Olympics was about 180 per minute, it's been widely touted as a means to reduce injury or improve speed, said Geoff Burns, an elite marathoner and University of Michigan doctoral student in kinesiology.

"It's one of the few biomechanical measures we have that is a gross system-level output for running," he said.

To find out what determines cadence and how much cadence really matters, Burns had the top 20 elite male and female runners record their cadence during the 100K International Association of Ultrarunners World Championship in 2016.

While the average number of steps per minute was 182, the number of steps per minute per mile varied enormously by individual.

"Some ran at 160 steps per minutes and others ran at 210 steps per minute, and it wasn't related at all to how good they were or how fast they were," Burns said. "Height influenced it a little bit, but even people who were the same height had an enormous amount of variability."

The main takeaway for runners is that cadence is highly individual, and your body knows what's optimal, said Burns, a third-year Ph.D. student in Professor Ronald Zernicke's lab. This means runners shouldn't necessarily try to manipulate cadence to reach the 180 steps, but rather, monitor cadence as their running progresses.

"It's a barometer and not a governor," he said. "There's no magical number that's dogmatically right for everybody."

For years, many coaches and practitioners thought that



cadence should remain constant as speed increases, which required longer steps. Burns says longer steps takes more energy, and his study found that

cadence naturally increased four to five steps per minute per mile as runners ran faster.

Other findings surprised Burns, as well. First, step cadence was preserved through the race, even during the torturous "ultra shuffle" near the end--when racers shuffle across the finish line, barely lifting their feet.

Burns assumed that exhausted runners would take shorter, choppier steps. But surprisingly, when researchers controlled for speed, cadence stayed constant.

Another unexpected finding is that by the end of a race, cadence varied much less per minute, as if the fatigued runner's body had locked into an optimal steps-per-minute turnover. It's unclear why, Burns said, but this deserves further study.

As a semi-pro ultramarathoner, Burns spends about two hours a day running and another two hours a day on conditioning--in addition to his doctoral work. "It's a really unique symbiotic relationship," he said.

Burns' research appeared in the February issue of Applied Physiology.

<https://www.newswise.com/articles/view/710287/?sc=dwh>