

Monfort Lab ‘an awesome thing to have’

21st-century testing aids student-athletes

By [Patrick Bahr](#)

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Alexis Skarda never had trouble winning races.

The sophomore All-American cross country runner at Mesa State College finished 19th at the NCAA Division II cross country championships last fall and has already won three races this season.

But as talented as Skarda is as a runner, she’s never been able to stay healthy. Since her sophomore year at Fairview High School in Boulder, Skarda has battled injuries such as a strained quadriceps muscle, lower back soreness, knee tendinitis and a stress fracture in an ankle.

All of those injuries occurred in her left leg.

“I never got the same injury twice, and it was always to the left leg,” Skarda said. “It was always something different.”

Usually, Skarda would play the medical guessing game to try to heal the latest malady.

Working in Skarda’s favor now is Mesa State’s new Monfort Family Human Performance Laboratory, which was designed, among other things, to pinpoint problems like Skarda’s.

Dr. Bill Sands, a former director of biomechanics and engineering for the U.S. Olympic Committee in Colorado Springs, is the director at Monfort lab. Sands, along with Gig Leadbetter, a professor of exercise physiology and women’s cross country coach, put Skarda through a few tests in an attempt to find out what was causing her injuries.

At the lab, the two men filmed Skarda running on an oversized treadmill with a high-speed camera. From that, they were able to analyze her running form.

“She was hitting a little wrong on one of her feet,” Leadbetter said. “She was protecting one side, pushing off harder on one side than the other.”

Then, Skarda was connected to an electric myogram machine, which looked at her muscle activity.

They realized Skarda had become one of the best cross country runners in the nation even though she wasn't using a major muscle group.

"We found out she is using minor muscles to move the left leg rather than the gluteus maximus muscle," Leadbetter said. "So the small muscles would eventually become tired, and the next thing you know, she has an injury."

With the problem isolated, Skarda is working with the athletic trainers at Mesa State to strengthen that muscle and train it to fire when she runs.

"The lab is such an awesome thing to have," Skarda said. "We were able to find out what was wrong, and now I can get stronger, which will help me when I run."

Skarda's story isn't an uncommon one since the lab became fully operational in early September. It has already done wonders for athletes who have taken advantage of the technology in the 2,800 square-foot facility in Saunders Fieldhouse.

The lab is used by Mesa State students in a classroom setting, and the Mavericks' athletes are tested to help determine a course of therapy for an injury.

"Most people are struggling on what human performance tests are," Sands said. "People don't know what kind of things can be tested in a lab setting. It's more than a treadmill test. We have more than 100 tests we can do."

The lab has already solved a few medical mysteries in Mesa State athletes other than Skarda's.

For the past two football seasons, Chad Benkelman battled a nagging hip injury.

Two years ago, while he was a student at Chadron (Neb.) State, Benkelman was told his pain was probably because a pulled muscle, and it was treated with ice and stretching.

Neither really helped.

When Benkelman transferred to Mesa State, the hip bothered him again and he was unable to participate in summer workouts.

"He had pain that nobody was ever able to diagnose what was going on," Mesa State head athletic trainer Josh Fullmer said. "But being able to see him under an infrared camera and the high-speed camera, it was very easy."

Benkelman's injury wasn't a pulled muscle, but his gluteus medius, a broad, thick muscle on the side of his pelvis, was weak.

"I was surprised," Benkelman said. "I thought I was pretty strong in those muscles."

Benkelman was given a set of rehab exercises and said the pain that existed before has begun to subside.

The technology of the Monfort lab helped both athletes return to competition quickly. Leadbetter said the lab seems to surprise everyone who sees it because they don't expect a school of Mesa State's size to have a human performance lab of that quality.

Not too bad for a lab that has gone from idea to completion in roughly five years.

"The whole idea for the lab started five or six years ago when Dr. (Michael) Reeder was saying we needed a lab where we could have collaboration with the doctors, physical therapists, exercise physiologists and biomechanics in the area," Leadbetter said.

"And somewhere along the line Charlie (Monfort) said his foundation had money that they wanted to give to us to develop a lab, and by that time we were ready for it."

Monfort, who owns the Colorado Rockies and is a Mesa State trustee, donated \$500,000 from his family's foundation in 2007, just before the Rockies played in their first World Series.

Leadbetter said the lab has been equipped with technology for prevention and health problems as well as increasing performance. Although it's on the Mesa State campus, its use isn't restricted to Mesa State students and athletes.

The lab is open to the public, and anyone can schedule an appointment to be analyzed by contacting Sands at 248-1918.

Steve Fante, a 53-year-old Grand Junction resident, recently went to the lab to have his golf swing and tennis stroke studied.

"Most people's athletic shots or strokes don't look like they picture they do," Fante said. "You can see where things are starting to go wrong and it's easy to see mistakes."

Fante's swings were slowed down on the high-speed video. He said he's already seen improvement in his tennis serve.

"With those sports, if something is fundamentally incorrect, it can affect the performance," Fante said. "I was able to see and correct a few small things that were wrong."

The lab has been useful for pinpointing issues in human performance, but it's also an important addition to the academic side of the kinesiology program.

Leadbetter said the lab provides students with an opportunity to work with equipment he didn't see until graduate school.

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GRETEL DAUGHERTY/The Daily Sentinel

MESA STATE COLLEGE cross country runner Alexis Skarda runs on the high speed video treadmill as Dr. Bill Sands, director of the Monfort Human Performance Lab, watches her gait. Skarda had stride anomalies that were discovered through high-speed video and an electromyograph.

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DR. BILL SANDS, director of the Monfort Family Human Performance Lab, watches the gait of Mesa State cross country runner Alexis Skarda as she runs on a treadmill in the research lab.