

As soon as exams wrapped up in late April, Hayley Lang of Humboldt, Sask., jumped right into a new challenge: an undergraduate research position at the Western College of Veterinary Medicine.

During the summer-long experience, the first-year veterinary student worked closely with her mentor, Dr. Spencer Barber of WCVM's Department of Large Animal Clinical Sciences. She also teamed up with Dr. Luca Panizzi, a large animal surgery resident and an EHRF Research Fellow.

Throughout the summer, Lang worked with Barber and Panizzi to evaluate existing and novel *arthrodesis* (surgical fusion of a joint) techniques on the legs of equine cadavers. Her fact-finding investigation contributed valuable information to the main study that focuses on a new and minimally-invasive *arthrodesis* technique for treatment of carpal spavin.

Carpal spavin is a specific form of degenerative joint disease that affects a horse's carpometacarpal joint — the lower joint space of the knee (*carpus*). Although it's uncommon, this arthritic condition causes severe lameness — so severe that affected horses are usually euthanized within 12 to 18 months of diagnosis. So far, the only successful treatment for carpal spavin is an arthrodesis technique that was developed by Barber. Now, the WCVM research team's goal is to develop a less invasive arthrodesis technique that requires less time in surgery and can be more easily applied by other surgeons.

"Dr. Barber and Dr. Panizzi were awesome to work with, and I also got to work with horses every day — my biggest passion," says Lang, whose first hands-on research experience was supported by the Equine Health Research Fund. "For me, this summer really helped me to decide that I want to be a surgeon so it was definitely worthwhile."

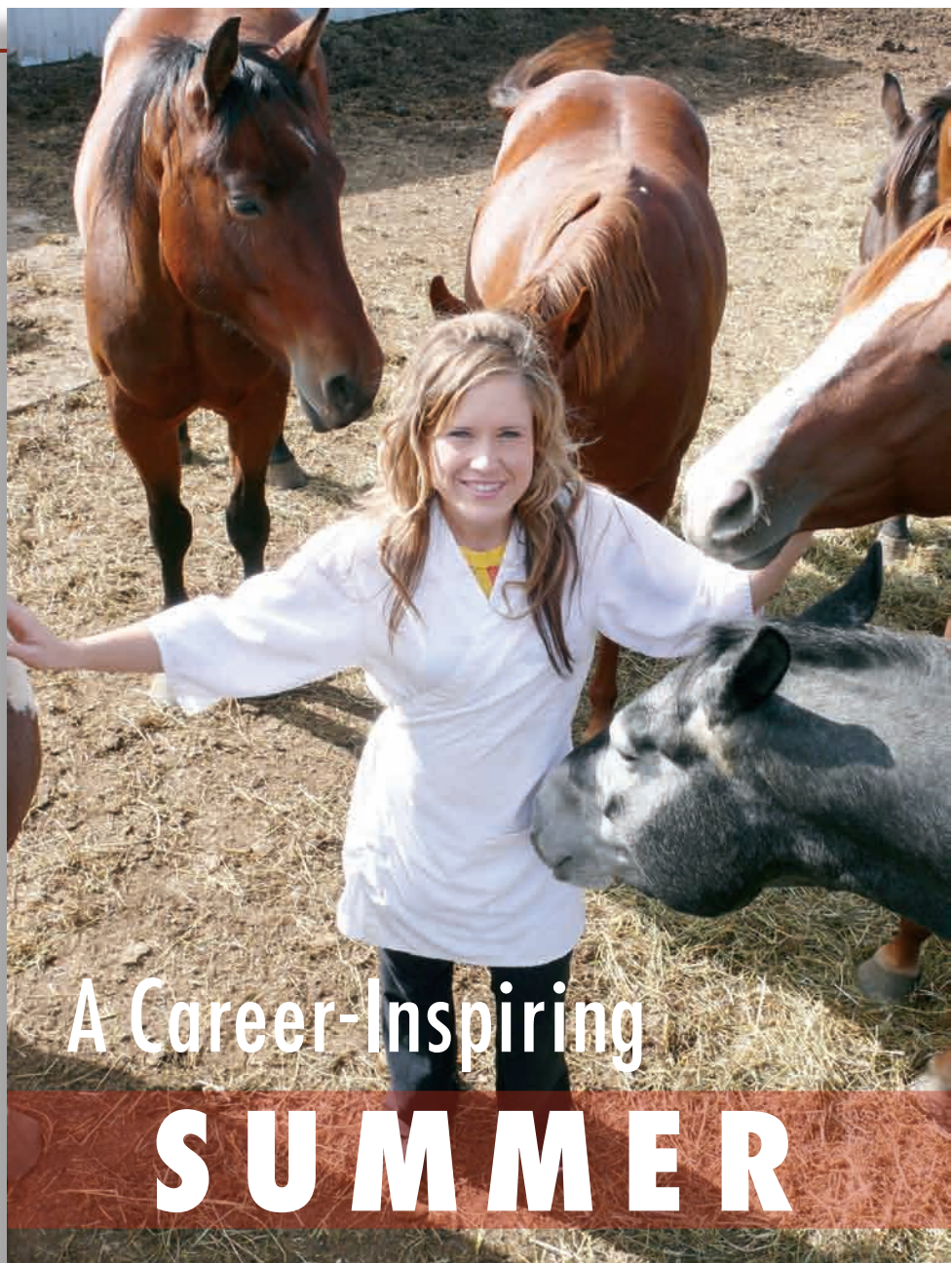
Q. What's your past experience with horses?

"I've been around horses my whole life, and I've had a summer job working with horses every year since Grade 5. Two years ago, I worked for an equine practitioner, then I spent last summer showing and training horses.

My mother and I have always had horses. I used to be involved in team roping and reining, but for the past few years, I've been showing Quarter horses. A real highlight came in 2004 when my mare (*Shooks Emma Lou*) and I won at the Canadian National Quarter Horse Show. I now have a new mare (*Memory of You*) that's doing really well. I also have a two-year-old Quarter horse filly (*Smooth Blueberry Te*) that I will begin showing this fall.

Q. How did you become interested in a research-related job?

After I finish my veterinary degree, I want to do a clinical internship and a residency in large animal surgery. While you're a resident, you



A Career-Inspiring **SUMMER**

also work on a MVSc (Master of Veterinary Science) degree that requires a research project, so I wanted to see what research was like.

I heard about Dr. Barber's carpal spavin research project when he talked to our class and invited students to apply for the summer research. After he interviewed a few people, I found out I got the job. I think my past experience with horses definitely helped since Dr. Barber and Dr. Panizzi needed some help in halter breaking the project's six horses and getting them used to walking and trotting over the force plate — one of the ways we analyzed the horses' gait during the research project.

Q. What was the focus of your research project?

My project evaluated three different arthrodesis techniques for the carpometacarpal joint in the legs of equine cadavers. Dr. Barber initially designed the project, and he and Dr. Panizzi perfected the surgical techniques on the cadaver legs. But other than the actual surgeries, I was involved in everything else: positioning the legs, helping set up the drill bits, photographing the different techniques, taking measurements, analyzing the results, and describing our findings.

Besides Drs. Barber and Panizzi, Dr. Murray Woodbury helped me with the project's statistics and Dr. Andy Allen helped me with the analysis of the cadaver legs, and the photography and radiography preparations.

Q. Will you eventually publish your findings?

I've completed a rough draft of my research article, and once others have had a chance to review and edit it, I hope to submit it to a peer-reviewed publication. I also presented my research poster during WCVM's undergraduate student research poster day in September 2007.

Q. How were you involved in the research work with live horses?

I actually scrubbed in for all of the surgeries. Dr. Panizzi and I had worked out a system for positioning the legs and preparing for arthrodesis during the procedures on cadaver legs so we just did the same for the live horses. I also had the chance to assist Dr. Panizzi while using the new, less-invasive arthrodesis technique on a clinical case of carpal spavin.

Q. What intrigued you most about this area of research?

It's not very often that you can see what happens after a horse's carpometacarpal joint has been fused, so that was really interesting to examine the cadaver legs after the surgeries.

The minimally-invasive arthrodesis technique is new, so there will be quite a bit of interest in our research once the findings are published. In fact, very little information has been published about any arthrodesis treatment of carpal spavin, so it's exciting to be part of new research in this area.

Q. How valuable was this summer for you?

It was a great summer with so many interesting experiences besides the research work. Dr. Barber let me scrub in to watch some other surgeries up close, I had the chance to meet all of the residents, clinicians and interns in the Large Animal Clinic — plus I got to see some very interesting cases that came in to the hospital over the summer. It really gave me a totally different view of the College than what we see as a first-year student.

Q. Do you think research may play a role in your future plans?

This experience will be extremely helpful when I apply for internships and a surgical residency. It definitely shows that I've had a chance to gain some exposure to research.

If I do become a board-certified surgeon, I'd like to eventually work at a university so I could work as a clinician and have the opportunity to do clinical research. I really enjoy how clinical research gives you the chance to follow the entire span of things — right from a specific idea or technique to evaluating it in a clinical case. **H**

Want to learn more about the Equine Health Research Fund's undergraduate student summer research program? Visit www.ehrf.usask.ca and click on "Education."



WEEKEND IN BLUEGRASS COUNTRY: In September, 25 third-year WCVM students immersed themselves in the world of equine health during the Opportunities in Equine Practice Seminar (OEPS) 2007 in Lexington, Ky. The western Canadians were among 527 North American students who attended the annual seminar that offers students a broad view of the equine veterinary field.

Organizers introduced the visiting students to all aspects of equine practice through a range of exhibits and a series of speakers, says Tamara Quaschnick, one of the weekend's participants from WCVM. Tours through local clinics and Lexington-based horse farms — plus a stop at the internationally-known Keeneland racetrack — were also highlights.

"This event was a real eye-opener — there's just so much to do in equine practice," says Quaschnick. "I'm definitely more enthusiastic about pursuing further training in equine veterinary medicine as a result of this weekend."

The annual OEPS is open to students who are members of their school's student chapter of the American Association of Equine Practitioners (AAEP). OEPS sponsors and a U of S student travel award sponsored the WCVM group's travel expenses. For more information, visit www.oeps.com.

EHRF ON THE ROAD: In mid-October, a team of WCVM representatives had the chance to meet with hundreds of horse enthusiasts from B.C., Alberta, Saskatchewan, the Yukon and Washington during the **Mane Event Equine Education and Trade Fair** (www.maneeventexpo.com) in Chilliwack, B.C. Throughout the three-day event, the WCVM team gave visitors more details about the College's equine health research and training programs that are supported by the Equine Health Research Fund (www.ehrf.usask.ca). The WCVM team included large animal residents Drs. Tal Raz and Luca Panizzi — two of the Fund's three EHRF Fellows for 2007-08. Hayley Lang, the 2007 EHRF undergraduate research student also attended the event along with Patti Tweed, WCVM's development officer.

Early in 2008, another WCVM team will take part in the **Horse Industry Association of Alberta's Horse Breeders and Owners Conference** — a popular continuing education event that will take place from January 11 to 13 in Red Deer, Alta. Each year, some of North America's top equine experts give valuable presentations on a range of topics including horse health, training and current issues in the horse industry.

The Horse Breeders and Owners Conference, which celebrated its 25th year in 2007, is a long-time supporter of the Fund and of WCVM's equine research group. For more information, visit www.albertahorseindustry.ca.

Above: ZF Mocha and Dr. Trisha Dowling (right) compete alongside teammates Bardos Grey Fonyx and Crystal Fulcher in the 100-mile Zone Team Endurance Challenge that was held in southeastern Montana from Sept. 22-23. Mocha is a 10-year-old mare whose dam and sire were part of a wound-healing research study at WCVM in the 1990s. Dowling and Mocha were one of four horse-and-rider teams from Western Canada that were qualified to compete in the Fédération Equestre Internationale (FEI)-sanctioned endurance race. The duo finished 15th out of 62 teams in Mocha's sixth 100-mile race — maintaining the mare's perfect completion record. To read Mocha's full story, visit www.ehrf.usask.ca and download a copy of *Horse Health Lines* (Autumn 2006).