



Equine Guelph 20th Anniversary Edition



**Annual Report
May 1, 2022 – April 30, 2023**

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Executive Summary

With the official opening of Equine Guelph in July 2003 - thanks to the vision of several dedicated individuals from the University of Guelph and the equine industry - the 20-year journey of the centre began. Equine Guelph represents a unique partnership between the industry and the University, providing a Centre for the horse owner at the University of Guelph.

In celebration of our 20th anniversary, a look back shows the progressive and ongoing development of several programs that serve the mandate of developing programs in service to the industry with a focus on health, welfare and safety. Funding from the associations and donors supports the important industry-focused research program, which in turn drives the communications program to the industry and the educational programming, which includes training of specialists and future vets through OVC. Each year, quality proposals exceed the amount available for industry priority proposals. The education program has seen remarkable growth, starting with the first course in our online program in 2002 now grown to 20 courses, with students from over 39 different countries, and offering specialized streams in Equine Science, Welfare and Business and offering UofG Certificates and a Diploma in Equine Studies. Continuing to build the pathway of learning for all ages, Equine Guelph continues to develop short, focused courses on The Horse Portal, including 3 racing-focused courses, with a development/review program that ensures up-to-date, evidence-based information is included in each offering in a plain-language “Take it to the Stable” approach for learning. There is definitely a trend that more people are looking for an educational pathway as they build their equine careers and personal involvement. And not to forget our youth, the participants and our leaders of tomorrow for the industry, the award-winning EquiMania! Program continues to delight and educate visitors, young and old alike, while learning about health, welfare and safety in the horse industry.

Equine Guelph continues to develop and build new education programs on The Horse Portal, and notably the Ontario Equine Education and Employment Program (OEEEP), first launched in November 2021 in response to challenging staff shortages, thanks to funding from the Ontario government and in partnership with OHHA and VPI, Inc. thanks to funding from the Ontario government. This program continues to support the industry attracting newcomers to our industry and helping to fill the need for staffing. The program continues to help match up our students with employers looking to hire new groom/caretakers and this is an important program for the industry and its future.

The Advisory Council of Equine Guelph, brings together the partnership of the equine industry, including provincial and national associations of Canada. This unique partnership continues to build on the strategic plan that provides the platform for academia and industry working together on research, education and training for new and current industry participants, and opening a forum for two-way discussions on new and emerging industry priorities. As the public continues to focus more and more on the topic of Social License to Operate, the partnership between academia and the industry – and the provision of research funding on health and welfare, along with training and education programs - becomes more of a priority for our equine sector than ever.

Research funding allocated was \$329,308 for research projects for 2022-2023. Nine new projects were accepted for funding on priority-designated topics for projects including equine asthma, intestinal health, colic surgery, and cardiac dysfunction. There are also 31 continuing projects that have received their funding in full and whose researchers will be updating the Research Committee with their progress in Fall 2023. Committee members, in turn, inform the funding bodies of the research and progress and stories and interviews on the research are distributed through the communications channels of Equine Guelph. Members of the Committee ensure the funding is applied to high-quality projects that serve the research priorities of the industry for the funding associations as long-term programs are being developed.

Funding has been received from the E.P. Taylor Fund, the HIP/TIP funds, the Ontario Racing and the Horsemen's Benevolent and Protective Association of Ontario (HBPA), and from Ontario Equestrian, along with important support from our donors. Further details on the research programs, including publications and national/international speaking engagements, are detailed in the Appendices, underscoring the research excellence that has developed from this partnership.

Designated by their funding association, Committee members bring extensive knowledge of industry challenges to ensure a program that works in support of health and welfare of our horses. The industry owes special thanks for dedicated service of these volunteers for the many long hours it takes for the careful review and assessment of proposals for scientific merit and potential applications to support new knowledge needed in support of current issues. This helps to ensure that industry funding is going to research on current industry priorities. Over 20 years, this program has achieved great success in developing knowledge to understand new and emerging health issues, better management and diagnostics on common issues, and more.

Equine Guelph made a full commitment to the development of the online program, with a new online program launched in 2002 - the first online evidence-based course offered for equine studies by an accredited educational institution. This has been a very effective strategy that has made a significant impact on pathways of learning for thousands of students from over 40 different countries and has received national and international awards. In 2022-23, there has been a growth in this program as more people embrace the many opportunities afforded by the online programs that offer the online Diploma and Certificate programs for Equine Science, Welfare and Business.

In 2005, The Horse Portal was launched offering short courses on focused topics to increase the learning and training opportunities. This suite of courses now includes over 15 courses, including 3 racing-specific courses, building the important opportunity for obtaining training and micro-credentials in support of industry participants and in support of the Social License to Operate for our equine industry.

The EquiMania! Youth and family program has been growing once again and now can return to on-site interactive displays that are available for special events such as fairs, Family Days, racetrack events and more as we continue to promote and sustain youth engagement. The EquiMania! Exhibit has been travelling to many venues both in Canada

and in the U.S., including the Minnesota State Fair, and provides a fun and engaging focal point for attracting youth and families. Our donors and sponsors continue to play a critical role in helping to keep this program strong, and EG is very grateful for their vision and support of this program.

Sincere appreciation is extended to the members of the Advisory Council and Research Committee for the support and funding that contributes to the success of Equine Guelph over our 20-year history – a centre created for the horse industry by the horse industry. Generous donors, sponsors and partners have joined in to provide ongoing support for our programs and special initiatives. This generous support allows Equine Guelph to continue building on our programs and develop new approaches for reaching out to our industry in support of health, welfare and safety and is greatly appreciated.

Equine Guelph acknowledges with sincere appreciation the Council partners as they continue to provide support and guidance for the programs of Equine Guelph on industry priorities – the Alcohol and Gaming Commission of Ontario, the E.P. Taylor Equine Research Fund, Equestrian Canada, the Horsemen's Benevolent and Protective Association of Ontario, Ontario Equestrian, the Ontario Harness Horse Association, Ontario Racing (which includes CTHS, COSA and SBOA), Ontario Ministry of Agriculture and Food, Standardbred Canada, the Quarter Racing Owners of Ontario Inc., Ontario Association of Equine Practitioners, and the University of Guelph.

This annual report provides the details on the 2022-2023 activities of Equine Guelph and recognizes the partnerships that make these achievements possible for the benefit of the equine industry and the health and welfare of the horse.





Dear Partners and Supporters of Equine Guelph,

Equine Guelph, the global pioneer in online education for the equine industry, is celebrating its 20th anniversary in 2023. It is indeed ironic that the words “pioneer” and “20” would appear in the same sentence! With warp speed, our world has evolved into a virtual one, connecting our horse community like never before – with Equine Guelph on the bit!

In May of 2002, amid a mix of skepticism and foresight, the first online course was developed and offered – a precursor to the official designation and opening of Equine Guelph in July of 2003. The vision? Equine Guelph would be the horse owner’s Centre at the University of Guelph, created by the industry for the industry, dedicated to improving the health and well-being of horses through research and education. Two short decades ago, who could have imagined that this small but mighty organization would serve horse people around the world?

This past year, almost 1000 students registered in Equine Guelph’s 12-week and short online courses with representation from 39 countries outside of Canada. Equine Guelph funded nine research projects at the University of Guelph which will contribute to the health and welfare of horses in Ontario and to the scientific communities and equine industries internationally.

Equine Guelph’s achievements in both its education and research programs at home and abroad have been made possible with the support of our industry associations and stakeholders. As we celebrate our 20th anniversary in 2023, we also celebrate relationship milestones with our longtime partners.

Equine Guelph salutes its 10 “triple A” corporate sponsors for making possible the delivery of unique education programs to the equine industry. Most of these sponsors represent multi-year partnerships and a shared long-term vision. Of note, Workplace Safety & Prevention Services has been our longest-serving sponsor for 18 years. This year, we share milestone anniversaries with 15-year sponsor, Kubota Canada, and 10-year sponsor, Boehringer Ingelheim. Equine Guelph salutes our corporate partners for their contributions to the advancement of the equine industry. For the research program, Equine Guelph thanks our longstanding funders for their support over the past two decades as part of our Council.

Please join us for our year-long anniversary party! It’s a celebration for all industry partners and stakeholders who supported Equine Guelph along the way in its 20-year journey of *helping horses for life™*. We’re champing at the bit as we look forward to the next 20!

Yours sincerely,

A handwritten signature in dark ink, appearing to read "J. Wichtel".

Dr. Jeffrey Wichtel
Dean, Ontario Veterinary College

A handwritten signature in dark ink, appearing to read "Al Patterson".

Mr. Al Patterson
Co-Chair, Equine Guelph

Introduction

“The Centre for the horse owner at the University of Guelph” -- Equine Guelph was founded in 2003 in a new initiative to create a unique partnership with the University of Guelph to provide a portal for research, education/training, and communications. Our mandate to support the health, welfare and safety of our horses and the people working in our industry continues as our priority role.

Concerns for employment issues, sustainability of the industry and public support along with the challenges of recovering from the last few years of shutdowns and restrictions are front and centre. Over its 20-year history of Equine Guelph, this partnership with the equine industry has provided support in continuing the research and education needs of the industry. This report shows that this partnership continues to provide value to the industry.

Leaders of the equine industry are invited to sit on the Advisory Council of Equine Guelph and now represent Equestrian Canada, The Horsemen's Benevolent and Protective Association of Ontario, Ontario Equestrian, Ontario Racing, Ontario Harness Horse Association, Standardbred Canada, Quarter Racing Owners of Ontario Inc., Central Ontario Standardbred Association, Canadian Thoroughbred Horse Society, Standardbred Breeders of Ontario Association along with members from the University of Guelph to created a model developed “by the industry for the industry”. Annual revenue from the E.P. Taylor Equine Research Fund, created by the racing industry and now overseen by the UofG, provides annual support for the research program.

Dean, Dr. Jeff Wichtel, OVC (representing UofG), and Mr. Al Patterson (representing industry), continued in their role as Co-Chairs and oversee the ongoing development of the Centre in service to the industry. The Advisory Council provides an important forum for two-way discussions for priorities and identifying changing opportunities within the industry for the research, education and communications programs. The valuable input and support of our Council members remains an important aspect of the operations and direction.

This Annual Report for the 2022-2023 fiscal year highlights progress, achievements and challenges of Equine Guelph and its programs in service to the equine industry throughout the province and across Canada.

Programs of Equine Guelph

Research

An effective research program focusing on industry priorities is an important program of support for our equine industry. Every year, the Research Committee, with the help of the external peer reviews, fully assesses proposals from UofG researchers. Consistently, the committee finds many projects of value to the industry but lacks the funding to cover the costs of all of them – an unfortunate development for the industry as many include areas designated as industry priorities.

Equine Guelph conducts an annual competition for research funding to be based on industry priorities as identified by the Research Committee. Proposals are sent out for external peer review from other universities for scientific merit. The committee then allocates the funding according to priority area and merit. This ensures the development of new and developing evidence-based information to support health, welfare and performance of horses. This process supports the needs of the industry as met through the available funding.

Research funding allocated was \$329,308 for research projects for 2022-2023.

Nine new projects were accepted for funding on priority-designated topics for projects including equine asthma, intestinal health, colic surgery, and cardiac dysfunction. There are also 31 continuing projects that have received their funding in full, and whose researchers will be updating the Research Committee with their progress in Fall 2023. Detailed information on those studies is found in the Research Projects for 2022-23 in the Appendices including the lay summaries and their application to the industry priorities.

The dedicated work and oversight of volunteer designated representatives ensures that quality, priority-based projects continue to be funded and there is annual reporting of progress and effective use of funds. Information produced by publication of the studies gives further benefit to the program as it is distributed to the industry through the communications and education programs of Equine Guelph and to practicing veterinarians, students, and industry participants at all levels in both the racing and non-racing sectors. This is an effective process to ensure return on the investment and provide the industry with a growing foundation of knowledge at all levels. Equine Guelph relies on industry groups to further distribute this knowledge to their membership by sharing research stories, press releases and researcher interviews. This helps disseminate knowledge to support horse health, welfare, performance and safety.

The contributions of the funding group and their representatives are greatly appreciated. Equine Guelph would also like to acknowledge the dedicated service to this committee by Dr. Dorothee Bienzle (Prof., Ontario Veterinary College). Dr. Bienzle is stepping down from the Research Committee after many years of exemplary contributions to the competition process. Her insight and expertise will be greatly missed.

Research funding is provided by the HBPA, the E.P. Taylor Research Fund, Ontario Racing (Horse Improvement Fund), as well as from dedicated individuals who donate to

the Research fund. An added important achievement is that researchers have been successful at leveraging research funds from funding agencies outside of the University, thus providing more “bang for the buck” for industry funding on industry-identified priority funding areas.

Dr. Thomas Koch continues in his role as Co-chair of the Research Committee. Discussions with industry leaders are always welcome and presentations on the research can be organized for industry associations to showcase the many research projects ongoing and the successful completion of funded projects.

Education and Training

An industry grows and thrives when its participants are encouraged to engage in education and training. Industries that engage in ongoing learning and development of their workforce can thrive and survive during challenging times. Surveys conducted by Equine Guelph showed clearly that time constraints and available money could impede the pathway of continuing education for many in our industry, although 99% of the survey respondents indicated that education was very important to the industry.

Equine Guelph continues to respond to industry needs, with the development of the first online program for equine education that was sanctioned by the UofG Senate, with the first course on offer in May 2002. That program grew to over 20 online courses offering three certificates in Equine Science, Business and Welfare, and a Diploma in Equine Studies from the University of Guelph. This program has seen significant growth during the last two years, attracting horse enthusiasts and professionals from over 40 different countries and placing Equine Guelph as an acknowledged pioneer in the development of online programming. The Certificate/Diploma programs have recently completed a full review and revision of courses to ensure they are up to date with new information on health, welfare and safety and include internationally recognised instructors and guest speakers.

The 12-week program continued to see over 1,000 students enrolled in our courses in 2022-2023, from over 18 different countries and the program attracted over 320 new students. Our total student population includes students from over 40 different countries, all sharing their love of learning about the horse.

EquiMania!

Things are looking up for our EquiMania! Exhibit after being “stall-bound” for several years. During the last few years, Equine Guelph continued offering monthly activities and learning objects for youth, however, there is growing interest in having EquiMania! included in fairs, activities, trade shows and more. The display is modular and therefore can be crafted to themes and accommodated to display spaces. The team is looking forward to taking our display and encouraging our youth and parents to develop an interest in the equine industry once again!

Funding for the education program comes through tuition/workshops, corporate sponsorships, for 2022-2023. This is invested into new and ongoing program development, online education programs, and virtual presentations and webinars.

The Horse Portal short courses

The new trend in online education is to provide “micro-credentials” for quick learning of knowledge or skills. With the development of The Horse Portal in 2016, Equine Guelph developed this concept with our short courses for horse owners, providing a cost-effective short course that focused on developing practical knowledge and skills on specific equine-related topics. This has allowed more industry participants to join our learning community on TheHorsePortal.ca. Our partnerships across Canada with the equestrian federations and racing groups plus other partners helped us build this unique program offering practical and applied knowledge in each course over the last six years.

In the first year of opening The Horse Portal in 2016, we were able to develop and offer 2 courses – one on the National Equine Code of Practice for the Care of Horses and one on Canada’s Equine Biosecurity standard. With further support and funding from sponsors, industry partners, AGCO and CAP, this program has now expanded to offer 15 portal courses in 2022-2023 providing 1,163 students the opportunity to access this new format for learning.

Two new courses were added to the growing roster this year. In Fall 2022, The Senior Horse was offered to students in partnership with Boehringer Ingelheim Animal Health, and in Winter 2023 Horse Trailer Safety (Part 1) was offered, whose curriculum was developed with the assistance of industry experts and first responders, The second part of the course is currently in development, with the goal of a Winter 2024 offering. After launching in 2021, The Equine Emergency Preparedness Certificate and the Equine Facility Management Certificate program were offered once again in 2022-2023. Feedback and contributions from our industry partners/groups and our students continues to define new opportunities and pathways for this program and many industry professionals were consulted and continue to contribute to the development for the courses. Looking ahead, Equine Guelph plans to offer a National Codes and Standards Certificate for students who complete both Horse Care & Welfare and Sickness Prevention in Horses short courses.

This year saw Equine Guelph join the new Ontario Equine Education and Employment program (OEEEP) in partnership with the Ontario Harness Horse Association (OHHA) and VPI, Inc. Funded by the Ontario government, this program helps to answer the need for staff, a growing problem in the Ontario industry. Six cohorts of up to 50 students were on offer and the first cohort commenced in November 2021. Students received training in job preparedness and job interview skills from VPI for 2 weeks. They also received 6 weeks of online learning from Equine Guelph for an introductory program that covered health, welfare and safety of horse and person, along with learning about the horse industry in Ontario. Then graduates entered a placement program, matching potential employers with new students. This was facilitated by OHHA and utilized Equine JobTrack for identifying possible employers. The first year of the program was a success, with 220

students accepted and 161 students completing the online program. With ongoing support of government funding and the industry partners, this program has been renewed for 2023 for an additional five cohorts.

The Horse Portal continues to grow due to the support from our partners and Council members and our sponsors. The Horse Portal has now reached its stride on the platform and can now offer specialized and customized training programs for the equine industry.

Horse Portal Partners currently include:

Provincial Horse Federations

- Alberta Equestrian Federation
- Equine Association of Yukon
- Horse Council of British Columbia
- Island Horse Council
- Manitoba Horse Council
- New Brunswick Equestrian Association
- Newfoundland and Labrador Equestrian Association
- Nova Scotia Equestrian Federation
- Ontario Equestrian
- Saskatchewan Horse Federation

Racing Organizations

- Ontario Racing
- Horse Racing Alberta
- PEI Harness Racing Association
- Central Ontario Standardbred Association
- Standardbred Canada
- Ontario Harness Horse Association

Animal Welfare Organizations

- Campbell Centre for the Study of Animal Welfare
- Ontario SPCA

Accreditation Partners

- Equestrian Canada
- the Canadian Therapeutic Riding Association

International Partners

- Saddle Up Safely (a program of the University of Kentucky Health Care, UK college of Agriculture and many community organizations)
- Equine Connection

Youth Partners

- 4-H Ontario

More information is provided in the Appendices.

Education Tuition Awards Continue

Important opportunities are provided to individuals in the racing industry through the Roger L'Heureux Memorial Award and Stuart Stocks Memorial award.

The Roger L'Heureux Memorial Award commemorates a dedicated racing enthusiast and provides an opportunity for a Standardbred driver, trainer or groom or University of Guelph student to continue with their educational studies.

Shawna Ward is the recipient of the Roger L'Heureux Memorial Equine Award in 2022.

Equine Guelph sincerely thanks the Stocks family for this moving award that is in memory of a passionate follower of the racing industry as it gives an important opportunity for a participant to further their career goals in the racing industry while achieving higher education and knowledge (not awarded in 2022).

Equine Guelph sincerely thanks the Stocks family and the L'Heureux family for their generosity providing these special educational awards and for their foresight in supporting the efforts of students for their career aspirations in the racing industry.

Large Animal Rescue Training Program

A growing interest in emergency preparedness and response of first responders for assisting and rescuing horses and other animals in emergency situations continues to fuel the need for specialised training offered by Equine Guelph. The following reviews the training that has been completed in 2022-2023.

Hands-on training:

Awareness level course was conducted for the **Dufferin Emergency Search and Rescue Team** (July 22, 2022).



October 1 & 2, 2022 – Fairgrounds at Coteau-du-lac, Quebec: This operational level course was the **first out of province course for our program**. The Monts et Vallons à cheval, equestrian club fund-raised for a year that resulted in bringing Equine Guelph's Large Animal Emergency Rescue training workshop to Quebec for the first time. Participants included 30 first responders including two veterinarians, two local club patrollers and fire fighters from eight different fire departments. Observers were also included.



"Together we can make a difference," says Aline Nault, club president, "Cost wise for a city, if a rescue lasts four hours instead of twelve, we all win and if our firefighters don't hurt themselves, it is also a win. If our loved four-legged friends come out of a rescue safely...jack pot!"

October 27, 2022 – University of Guelph – 1-day Awareness level course for 2nd year Diploma in Equine Care and Management program students.

April 15, 2023 – Awareness Level course at the **University of Guelph** through a partnership with the Bachelor of Bio-Resource Management program, Department of Animal Biosciences. Participants included twenty equine program undergrads and local horse owners.

“This course was very hands on and informative. Using real world examples to apply the skills learned,” explained student Emily Pauseli. “An animal in distress acts very different than when calm and this course helps erase some of the confusion and panic allowing for quicker and more effective/safe rescues.



April 19, 2023 - For the past three years, Hamilton Mounted Police have sent their officers to receive hands on training at Large Animal Emergency Rescue Training workshops provided by Equine Guelph. This Awareness Level course took place at Holly Oaks Farm in Lynden, ON. This training was also attended by staff of several local veterinary clinics including McKee Pownall, Troy Equine Services, Paris Vet Clinic and Halton Equine.



Large animal rescue technique – sideways drag. Photo by Randy Carter

Presentations:

Humane Canada's Summit for Animals (previously known as the National Animal Welfare Conference) (May 4, 2022), virtual presentation – "Large Animal Rescue and Livestock Emergency Response Training – The value of multidiscipline responder training."

Tradeshows: **Ontario Association of Fire Chief's tradeshow** (May 6 & 7, 2022) – partner booth with Farm & Food Care – Ontario

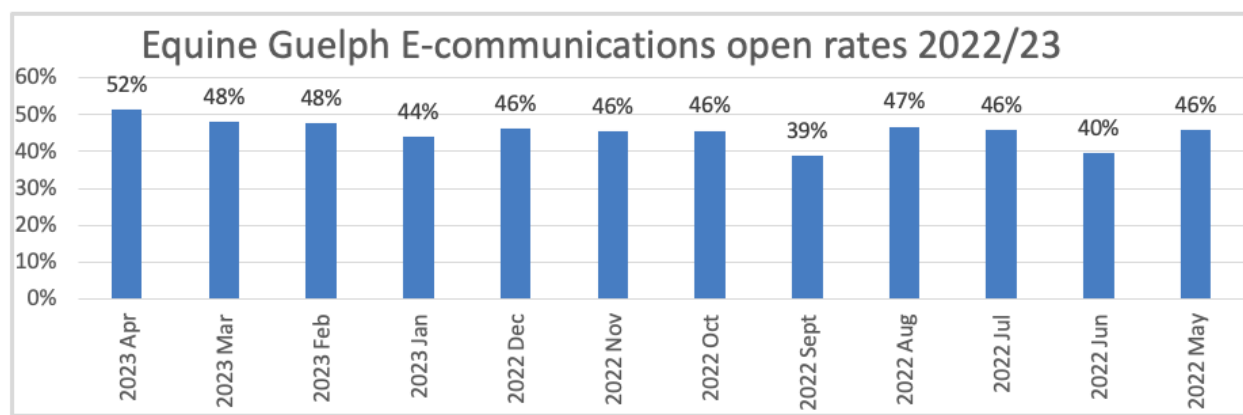


Expenditures for the education program were \$449,186. This was invested into new online program development, online education programs, and virtual presentations and webinars. Live training workshops were cancelled. The online education tuition returned \$177,902 a small decrease over last year (\$189,680), but still demonstrating continued interest in online education resulting in increased student enrollment.

More detailed information on the education program can be found in the appendices.

Communications and Marketing

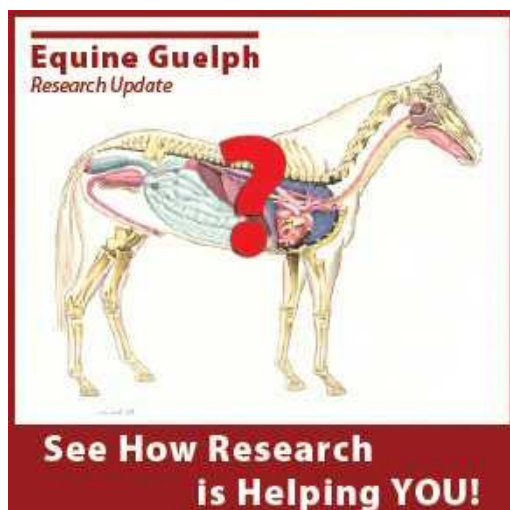
As Equine Guelph enters its 20th Anniversary year, our loyal E-news subscribers are more engaged than ever with open rates soaring from 39 – 46%. Our media list also continues to grow and become more engaged with open rates rising from an average of 47% in 2021/22 to 49% in this fiscal year. The industry average open rate is 36% for an educational institute, as of March 2023, according to Constant Contact. Equine Guelph continues to deliver horse care and welfare news to a deeply committed audience.



The media continues to pay special attention to the resources and courses that The Horse Portal has to offer. With the support of Ontario Racing, Central Ontario Standardbred Association and Standardbred Canada, Equine Guelph was able to offer free courses once again for the racing sector, including respiratory health, lameness/injury prevention, and gut health colic and ulcer prevention, for AGCO license holders and Standardbred Canada members. This project continues to be successful since its inception created from a special pilot project launched in 2020 (funded by AGCO). The communications on this program received excellent pickup in the racing media. Coverage of racing industry specific courses have been shared across many Standardbred, Thoroughbred, and Quarter Horse racing news sources and the racing media have responded with exceptional distribution of the Racing-Specific program.

Media has shown continued interest in Equine Guelph's Large Animal Emergency Rescue program (LAER) with the re-introduction of hands-on offerings. LAER continues to provide valuable introductory training to fire fighters, first responders and the racing industry. As a result of a workshop in Quebec, the LAER program was featured on the television show Salut Bonjour broadcast on TVA Channel. (See Education section special report on Large Animal Rescue courses offered by Equine Guelph).

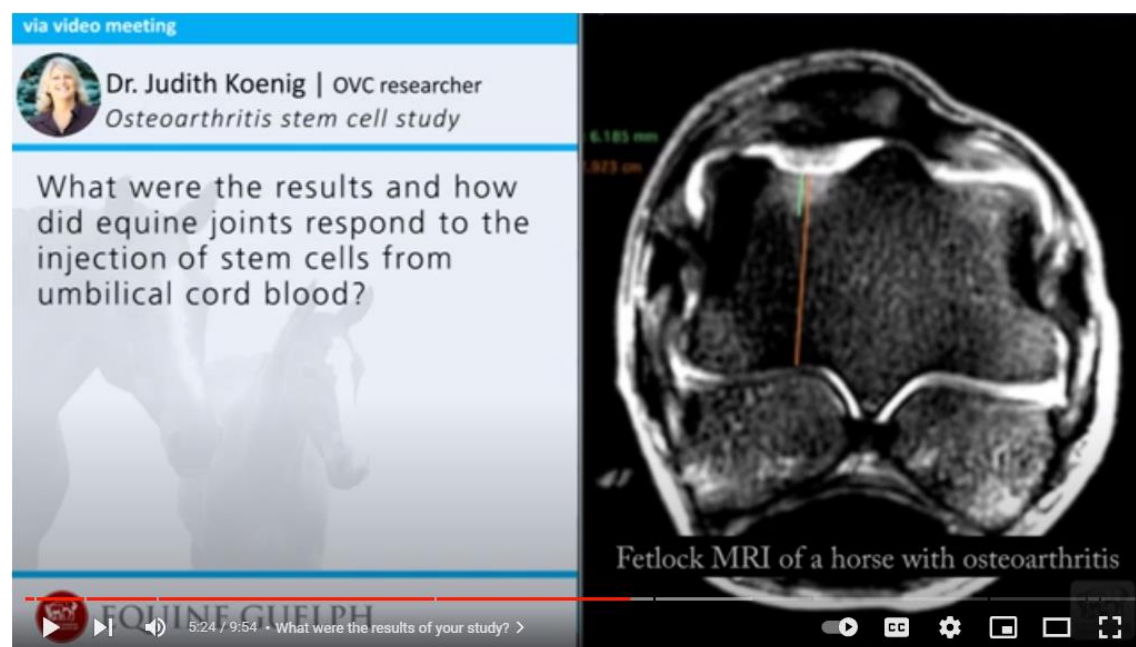
NEWSLETTER



Volume 20 of Equine Guelph's Research update was released in January 2023. It features research by Dr. Judith Koenig, and her team, who are investigating the potential for stem cells in the treatment of equine osteoarthritis.

Equine Guelph's newsletter has a major research focus along with providing updates on educational programs. The newsletter is partially supported by the industry investment into the research program as it extends distribution of research findings to the industry. A PDF copy is available on the Equine Guelph website. It is broadly advertised through the Equine Guelph E-news and press releases.

The annual digital version of the Equine Guelph Research Update was well-received and recapped several 2022 research related news releases, complete with links to several video interviews with researchers.



Interest in research articles via the monthly E-news and press releases has increased in the past fiscal year with great interest on topics covering equine asthma, stem cells and behavioural studies. Video interviews continue to accompany many of the research features and are cross posted and disseminated through our social media channels, including the Equine Guelph YouTube channel.

Exciting videos of Equine Guelph Alumni will be featured in the 2023 E-news thanks to a partnership with University of Guelph, Bachelor of Bio-Management Resource students who conducted and helped produce this special feature series. Wonderful testimonials were shared by the graduates of Equine Guelph's many certificate programs and diploma program. Alumni attested to the quality of instruction, supportive environment and impact on how the courses changed and improved their stable management and horse care skills. Here is a [link to the highlights video](#) for these heartfelt testimonials.



Direct industry funding support for the Communications and Marketing program was \$33,000 for the year, which came through the Horse Improvement Program (HIP) / Horsemen's Benevolent and Protective Association of Ontario (HBPA).

Equine JobTrack

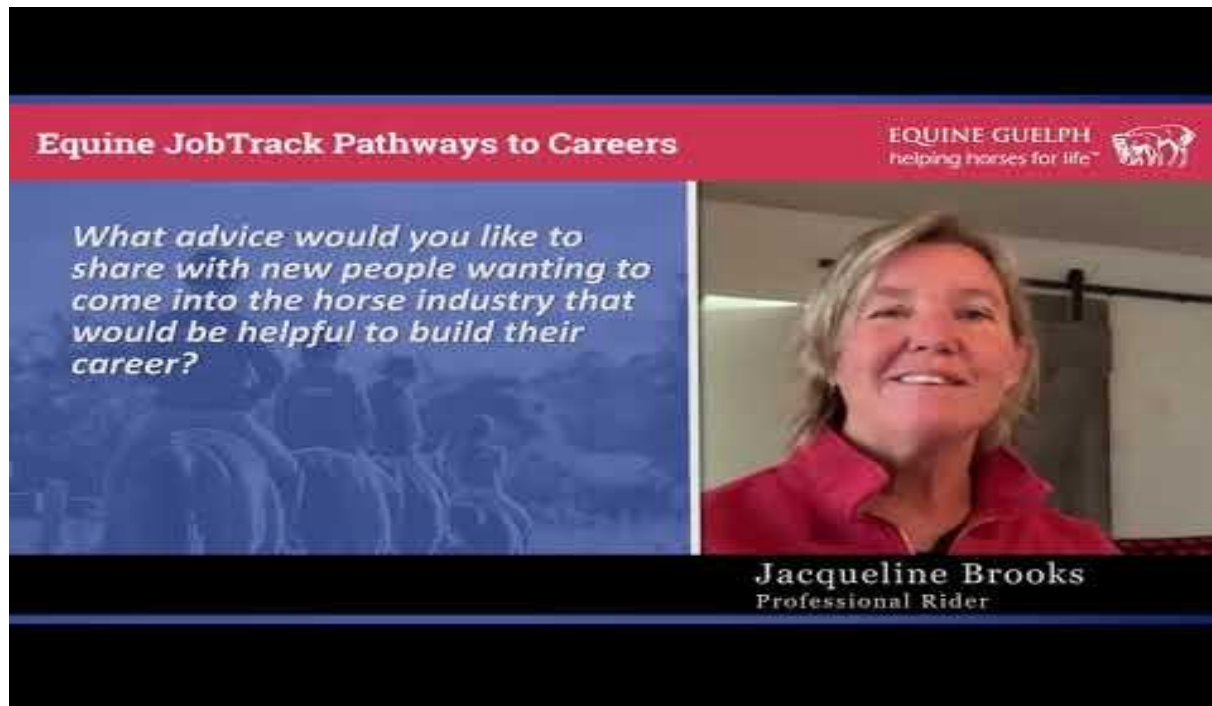
Given the new reality of the difficulties finding staff, the new Equine JobTrack has been an important service for the industry, as well as playing a central role in the Ontario Equine Education and Employment program for matching students to facilities looking to hire grooms and caretakers in starting roles. With sincere thanks for the support of HBPA and funding from Grand River and Ontario Racing, the enhanced functionality of Equine JobTrack, re-launched in March 2021, has had some wonderful comments sent to us about how it is helping our industry. There is a growing number of facilities that are using the site to find much needed staff. Equine Guelph will continue to add more resources for job seekers in the coming months, such as the Career Showcase.

The Careers Showcase has been a massive undertaking with 78 roles in the horse industry represented thus far. The digital learning object has been created to help newcomers learn about the many career opportunities available in the industry. Video

footage has been released in Equine Guelph's monthly communications featuring interviews with industry professionals sharing their thoughts on their roles within the industry. They also share their journey to assume those roles. 41 video interviews were produced in the past fiscal year!

Jacqueline Brooks is among the videos released in our monthly E-news features.

[CAREERS SHOWCASE - Professional Rider on the Canadian Dressage Team - Jacqueline Brooks](#)



Equine Guelph sincerely thanks HBPA, Ontario Racing, and Grand River Agricultural Society for their contributions that have enabled this valuable and free service to be upgraded and enhanced as a service to our industry.

E-news & HEALTHflash

The Communications team of Equine Guelph continues to provide the monthly, free distribution of e-news to help our industry stay informed on updates for health, welfare, and safety along with the most recent research information being generated through the Research funding program. It also highlights the many education and training opportunities that are offered through Equine Guelph.

There continues to be strong media pick-up of Equine Guelph communications as can be seen by the number of national and international media outlets that pick up the articles each month. These are valued articles that help keep audiences informed about added information, research findings and unique events.

With support from our sponsors, Equine Guelph produces and distributes *HEALTHflash* (since its inception in 2013). The quarterly communication consists of 4 seasonal email reminders + monthly health alerts. Ten years later, this publication continues to be highly popular, and links have been created from equine media across North America including: Equestrian Canada, Horse-Canada.com, HorseJournals.com, SystemEquine.com and The Rider, among a growing number of others.

Website

Equine Guelph's goal is to create The Horse Portal website as a virtual portal for a trusted source of information on research, special events, and opportunities for education and training for both racing and non-racing sectors of the industry.

TheHorsePortal.ca page views are 487,219 and the combined total of page views for this fiscal year to our webpages is 540,154 with strong signs of continuing growth.

Equine Guelph's website has reached over 28,684 new unique visitors with the most popular pages relating to the educational programs. 39,266 new visitors came to the HorsePortal.ca this fiscal year, with the landing page being the most popular followed by educational offerings. Traffic to both websites is arriving primarily through organic and direct search with Google as the number one source. The top landing page on TheHorsePortal.ca is EquineJobTrack.ca followed by the home page and educational online course listings.

39,971 YouTube videos have been viewed (Most popular: a video short from the Large Animal Emergency Rescue course, lameness lab #1, foaling how to's, research report on deciphering horse whinnies, trailer pre-trip inspection, basics of infection control, conditioning and research on roaring).

Media, Seminars and Presentations, Association Targeted Communication

For a complete list of seminars and presentations given by Equine Guelph staff, please see Appendix 8. Regular communications are released to the equine media in formats that are easily included in their publications, whether in print or electronic form. Over 307 articles have been published about the programs of Equine Guelph in the industry media (see Appendix 12).

A broad range of coverage continues from a variety of industry publications, including both racing and non-racing interests. Equine Guelph staff regularly review and monitor industry magazines, newsletters and websites to follow and record the ongoing coverage.

In 2022-23, there has been extensive coverage from: HorseJournals.com, Standardbred Canada, COSA, and The Rider magazine.

Equine Guelph stories were also featured in Horse-Canada.com, RoyalFair.org, HBPA.com, Raceline, Quarter Racing Owners of Ontario Inc., CanadianThoroughbred.com, Trot Magazine, Harness Racing Update, Horse Sport

Magazine, SystemEquine.com, Grand River Agricultural Society, Farms.com, HorsemanshipRadio.com, PaulickReport, WellingtonAdvertiser.com, University of Guelph Newslinks, Campbell Centre for the Study of Animal Welfare, Alberta Standardbred Horse Association, The National Post, Toronto Star, The Globe and Mail, Ontario Association of Veterinary Technicians, the Ontario Veterinary College bulletin, and the majority of Canada's provincial equine associations.

In addition, Equine Guelph received coverage from international horse industry websites such as; HarnessLink.com (Globally distributed, tailored to Standardbred racing audience), HorseTalk.co.nz (New Zealand), Tolt Talk (Australia), EquiMed.com (California, USA), EquiManagement.com (USA outlet focused on the business of veterinary practice & equine research), EquineChronicle.com (Florida, USA), EquusMagazine.com (USA media partner of the American Association of Equine Practitioners), Equine Science Update (UK with global distribution), Equine Info Exchange (USA with global audience), Trainer Magazine (North America & Europe targeted to a Thoroughbred racing audience), AmericanFarriers.com (USA), TheHorse.com (USA with global distribution), StableManagement.com (Lexington, KY with distribution across USA), American Riding Instructors Association (USA), Cayuse Communications (USA), NickerNews.net (USA), HorseNation.com (USA with global reach), The Northwest Horse Source (Colorado USA), Saddle Up Magazine (USA) and EverythingHorseUKco.uk (UK with distribution beyond UK).



Links to Equine Guelph resources continue to be created from sites including: Equestrian Canada, Provincial Equestrian Federation websites, veterinarian web sites, and blogs from social media sites (i.e., Facebook, Twitter, LinkedIn and Instagram). Information

and service sites are also actively posting links to Equine Guelph resources e.g.: Acera Insurance Services Ltd. and SystemEquine.com directing the public to Equine Guelph's online courses, horse owner tools and research.

Archived research videos are being accessed and have been recirculated by media such as HorseJournals.com, who have featured Research Radio videos regularly in their 2022/23 eblasts and embedded them on their webpage.

Strong support from Ontario Equestrian (OE) continues to help the distribution of EG communications through their social media channels. This provides important assistance in alerting their members to new educational opportunities, thus helping to boost student enrollment and increase tuition revenue. Important partnerships have been developed with OE including the program to contribute to research support.

Several other sponsors and provincial equine organizations have been posting links on their sites to help promote the communications, research and education/training initiatives including the tuition awards for racing, The Horse Portal course offerings, racing industry specific course offerings, 12-week course offerings and more.

The Horse Portal has linked 10 provincial equestrian federations nation-wide, as well as the OSPCA, Campbell Centre for the Study of Animal Welfare, Ontario Racing, Horse Racing Alberta, Standardbred Canada, 4-H Ontario, Canadian Therapeutic Riding Association, Equestrian Connection and Saddle Up Safely, each with their own unique landing page generating traffic to the new short courses offered by Equine Guelph.

Information Inquiries

Information requests keep the staff of Equine Guelph very busy!

Numerous e-mail information requests are fielded daily with varying questions on a wide variety of concerns and topics. Inquiries about employment opportunities continue and we direct people to the Equine JobTrack site.

Given the feedback we are getting, it is clear that providing an information portal for the industry as well as Equine JobTrack has been playing a key role for people in our industry for ongoing information, employment and industry development and sustainability. Equine Guelph fulfills the needed role for the industry as a real portal between the industry and the knowledge developers involved in the research and extension programs at the University of Guelph. This program remains without a funding basis by the equine industry or government.

Popular topics include information requests on colic/ulcer prevention, nutritional advice, euthanasia and disposal options and also queries about equine veterinarian shortages, career pathways, large animal emergency rescue courses, biosecurity for horse owners and current outbreaks of concern, specialize nutritional management, identifying sources of information on new and emerging diseases/medications and diagnostics, concerns about real or perceived welfare issues such as investigations for welfare issues, transportation issues, and environmental issues at facilities.

Development

A. Equine Guelph 'Helping Horses for Life' Development Campaign:

The following information reflects fundraising initiatives and private donations as well as corporate sponsorship sales over the past fiscal year:

	FY21-22 Amount Raised	FY22-23 Amount Raised	FY22-23 No. of Unique Donors	FY22-23 Median Gift
Education	\$7,758.50	\$4,222.00	2	\$2,111.00
Equine Job Track, Large Animal Emergency Training and Youth Programming*	\$50,000.00	\$50,125.00	3	\$100.00
For The Herd Learning Community	\$212.00	\$0.00	0	\$0.00
Kerr Fund for Equine Education and Community Outreach**	\$0.00	\$100,000.00	1	\$100,000.00
OE Welfare Education Fund	\$240.00	\$1,290.00	4	\$10.00
Research	\$2,785.00	\$4,340.55	15	\$100.00
Sponsorship***	\$78,800.00	\$106,800.00	10	\$8,250.00
Stuart Stocks Memorial Equine Award	\$1,000.00	\$0.00	0	\$0.00
Greatest Need	\$26,716.80	\$34,587.00	78	\$30.00
Total	167,512.30	301,364.55	110	\$30.00

TABLE I - Funds raised from private donations and sponsorship to EG accounts during FY21-22 and FY22-23 including number of unique donors and the median size of gift for each account.

* The Grand River Agricultural Society made a three-year commitment of \$150,000 in support of the following EG initiatives: Equine JobTrack, Large Animal Emergency Training and Youth Programming. The donation for the second year, FY2022-23, was \$50,000.

** A generous EG supporter donated \$100,000 both in FY2019-20, and FY2022-23 which in turn, was invested. The purpose of the Fund is to support ongoing base operational funding for EG horse education, communication, and community outreach initiatives. The expendable portion of the Fund is dependent on interest rates.

*** Includes an extra \$12,500 from Workplace Safety & Prevention Services whose payment for a sponsorship in FY21-22 was received in FY22-23.

1. Annual Spring Appeal: The 2022-23 spring appeal was mailed in June 2022. Its focus was on education, research and healthcare and its signatory was Sheryl Kerr – an EG student and major donor; the appeal included a letter, donation card and return envelope. The following stats measure the gifts that came from people who received the EG appeal and responded directly to the letter:

JUNE MAILING	FY21-22	FY22-23
Recipients	372	371
Total cash-in	\$5,695	\$2,545
Total donors	31	26
Average gift	\$183	\$97.88
Participation	8.3%	7.01%

TABLE II – Comparison of select metrics for the past two appeals.

The June mailing was followed by an e-mail chaser in July 2022. The following stats measure the gifts from this online initiative:

JULY E-MAIL CHASER	FY21-22	FY22-23
Recipients	172	187
Total cash-in	\$2,040	\$160
Total donors	2	2*
Open rate	Not available	50%
Click through rate	Not available	4.4%
Average gift	\$1,020	\$16

TABLE III – Comparison of select metrics for the past two appeals.

* Includes a monthly donor who set up a recurring gift of \$15/month.

The e-mail chaser does not traditionally yield a high number of donors, but it is worthwhile as it has resulted in securing major donors.

2. Ontario Equestrian Annual Membership Mailing Fundraising Program: Each year Ontario Equestrian (OE), through its annual membership renewal form, gives its members an opportunity to donate to a cause (Equine Guelph is one option on a list of choices). OE raised \$2,434.62 in the calendar year of 2022 and donated this amount to EG in FY2022-23. (Note: \$3,922 for the calendar year 2021 was also received in FY2022-23).

B. Corporate Sponsorship Program: The FY 2022-2023 sponsorship program made gains from the year before (\$78,800), adding two one new sponsors and maintaining existing sponsors. Losing three long-term sponsors Total revenue from the corporate sponsorship program was \$106,800.

Sponsor	Education Initiatives	Revenue
Acera Insurance Services Ltd. (formerly CapriCMW)	Colic Prevention Education Month (tool/course), Hoofprints program, lameness course, portal PTSO partner pages	\$15,000
Boehringer Ingelheim Canada	EG E-News & Senior Horse Education Month (tool/course)	\$13,500
Central Ontario Standardbred Association	Free racing-exclusive course (respiratory)	\$5,000
Kubota Canada Ltd.	Online behavior & safety course (youth & adult offerings)	\$5,000

Merck (Intervet Canada Corp.)	EG HEALTHflash	\$7,000
Ontario Racing Management	Free racing-exclusive course (gut health with new ulcer content)	\$9,000
SSG Gloves	Online behavior & safety course (youth & adult offerings)	\$15,000
Standardbred Canada	Free racing-exclusive course (lameness)	\$2,300
Workplace Safety & Prevention Services	Online behavior & safety course (youth & adult offerings), Fire Prevention Education Month (tool/course), trailer safety resources	\$12,500 \$12,500*
Zoetis (NEW)	Vaccination Education Month (tool/course), World Rabies Day promo	\$10,000
TOTAL		\$106,800

TABLE IV – Represents sponsorship funds from FY2022-23

* Payment received this year for a FY21-22 sponsorship and payment for FY22-23 was received early in FY23-24, so included above.

C. Equine Guelph Store

Equine Guelph retails laminated HHC barn posters at major events and through mail-order. Total poster revenue in FY22-23 was \$169.83.



Financial Report

The Year End Financial Report is included in the Appendices. Quarterly reports are produced for the Equine Guelph Advisory Council. Financial reports include forecasting of revenue and expenditure for each of the program areas and year-to-date statements.

Equine Guelph revenue totaled \$770,693 (compared to \$743,367 for previous year) for the fiscal year with funding provided by our funding partners, donations, and online course tuition. Program expenditures totaled \$830,437 (\$654,958 last fiscal year).

The research program allocated \$329,308 for research projects, \$267,423 of which was distributed to researchers this fiscal year (the remaining funds will be distributed once researchers complete their Animal Use Protocols (AUP's) in the new fiscal year. Expenditures for the education and communications program were \$563,014, which included program development, online education programs, and marketing. Online education tuition returned a total of \$172,936, (compared to \$177,902 from last fiscal year).

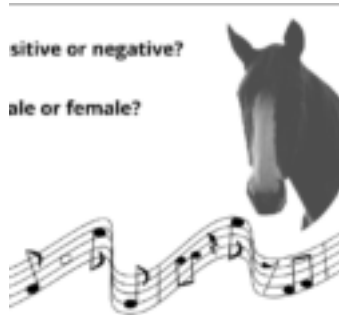
While there are still challenges for ongoing stability in funding for the racing industry, due to the shutdowns, funding levels have been consistent in recent years. Industry funding was \$38,000, which equals what was contributed last year. This funding is used for the support of administration of the research funded program and direct-to-industry communications on the research program.

The majority of funding for the education/communications program continues to come from tuition, sponsorships and successful grant proposals. Research funding continues to be a source of significant concern going forward without specific designated funding identified and protected. While funding has remained somewhat steady in recent years, the goal of stable consistent funding for the programs of Equine Guelph, as a Centre at the University for the horse industry will continue to be an issue of high priority as the industry continues with its efforts to develop a re-organized model that provides it with a sustainable business model. Research and education/training of the members of the racing and non-racing community will continue to be an important part of future success.

Highlights and Special Events

May 2022 – April 2023

Welcome to our highlight reel. If you would like to know more about any of the following press releases, click on the titles to follow the web link to the full story.



MAY30

What is in a Whinny?

When horses talk, we listen but how good are we at deciphering what they have to say? According to a recently published study (Nov 2021) by Dr. Katrina Merkies, researcher and associate professor at the University of Guelph, and her master student Haley Belliveau, we are faring well...



JUN15

Newcomers to the Horse Industry Succeed with OEEEP Program

Graduates like Susan Walker are following their hearts and entering the horse industry thanks to the Ontario Equine Education and Employment Program (OEEEP). Ontario residents, 18 years and over, that are unemployed or underemployed...



JUN21

PVC an Emerging Trend for Horse Barn Construction

With biosecurity advantages and the huge selling point of not absorbing moisture, Dwayne Job, owner of System Equine, sees the use of PVC in horse barns as a trend that will continue to gain popularity...



JUL11

Praise for Practical Online Learning on TheHorsePortal.ca

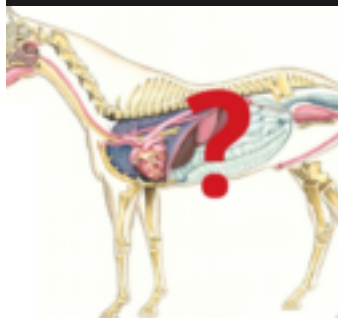
Whether you are brushing up on Emergency Preparedness with a course in equine first aid or other stable management priorities like learning what's in your forage; TheHorsePortal.ca has been helping equestrians advance their knowledge...



JUL11

Employers and Grads Agree: OEEEP Works!

This successful program matches enthusiastic graduates with busy equine businesses, offering free training courses and attractive financial incentives. The Ontario Equine Education and Employment Program (OEEEP) was launched in January of 2022 and has proven to be a welcome win-win opportunity for Ontario...



JUL11

The Impact of Antibiotics on the Equine Gut

The thinking on how we use antibiotics is changing in the world of medicine especially as we learn more about their impact on the inhabitants of the gut. Ontario Veterinary College researcher, Dr. Diego Gomez, took part in a collaborative study with researchers across North America to study the effects of intravenous antimicrobials...



AUG16

Equine Guelph's Latest Online Course is Golden!

Get Savvy for your Senior Horse If you fail to plan, you can plan to fail the adage says. It is certainly true when it comes to keeping your horse comfortable in its golden years. Picking up on subtle cues and knowing when to make management changes can make all the difference...



SEP1

Horse Crazy Youth Learn to Speak Horse by Taking Free Online Course

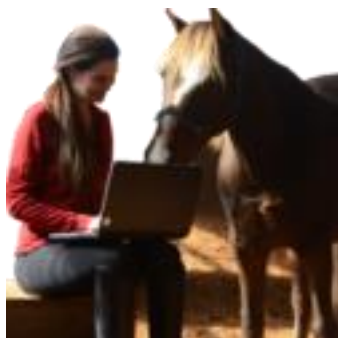
On countryside road trips, do your children point and shout "HORSES" without fail? Are they drawn like a magnet to the majesty of noble equids? If so, this online, self-paced course from Equine Guelph is for them and it will be FREE for a limited time! The Horse Behaviour & Safety online course on TheHorsePortal.ca...



SEP1

Equine Guelph Names September Senior Horse Education Month

Equine Guelph has announced that the month of September will be Senior Horse Education Month. As our landscape starts to turn golden with the approach of fall, and a nip of nostalgia in the air, we pause to think about our equid friends in their golden years...



SEP6

Leading the Herd in Equine Studies Online

Ontario Racing Industry Members – Don't Miss out on Tuition Awards! Fall semester for Equine Guelph 12-week online courses began September 2022 and the next offerings in Jan 2023 and May 2023 will see two lucky tuition award applicants enrolled. A pioneer in developing university accredited online courses for the horse industry, Equine Guelph offerings...



SEP26

Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma

Heaves is known as a disease that can leave a horse struggling to breathe, ending athletic careers and even rendering a pleasure horse unsuitable for riding. Commonly known today as equine asthma, it's an irreversible disease brought on by repeated exposure to dust and moulds. Ontario Veterinary College researcher, Doctor Bienzle...



OCT12

Free Online Racing-Exclusive Training is Back

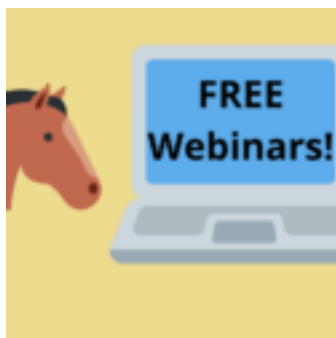
Thanks to Equine Guelph's incredible racing industry education partners, TheHorsePortal.ca will host three racing-exclusive short courses in the winter of 2023 – FREE for AGCO licensees and Standardbred Canada members! (value \$95). "We are thrilled to once again offer these valuable short courses on the hot topics of lameness prevention, respiratory health and gut health..."



OCT19

Equine Guelph's Large Animal Emergency Rescue Workshop Travels to Quebec

People are willing to go to great lengths to rescue their animals and do not always make the best decisions in stressful emergency situations, retired police officer Aline Nault can attest. The Monts et Vallons à cheval, equestrian club president is proud of her members' dedicated year-long fund-raising campaigns that resulted in bringing...



OCT25

Annual Equine Industry Symposium Features Horses in Human Health and Learning

The annual Equine Industry Symposium, hosted by the University of Guelph's Bachelor of Bio-Resource Management – Equine Management degree program, returns this year for its 7th edition on November 21 – 23, 2022. This year's theme, Horses in Human Health and Learning...



OCT31

Can Ponies Distinguish Human Facial Expressions?

Most humans are good at giving someone a wide berth if they approach with a furrowed brow but how good are horses at interpreting our expressions? Dr. Katrina Merckies, researcher and associate professor at the University of Guelph and her team found out...



NOV1

Equine Guelph Declares November Fire Prevention Education Month

ABC's of Fire Extinguishers – New Barn Fire Prevention Resource from Equine Guelph Do you have the right fire extinguisher for your barn and horse trailer? Find out from firefighter, Robert Nagle, in a new video posted on TheHorsePortal.ca/FirePreventionTool. Learn...



NOV7

Last Call for the FREE Online Youth Offering for How to Speak Horse

Discover why teens from around the globe are signing up to learn how to communicate with horses and forge relationships built on that understanding. Students from all over Canada and as far away as Australia, New Zealand, Italy and the United Kingdom are enrolling in the limited time FREE offering of Horse Behaviour & Safety...



NOV15

EquiMania! Resources for Youth

Safety has never been this much fun! EquiMania.ca is a website full of interactive games and resources geared towards youth wanting to learn more about horses and their care. There is always something new to learn! Workplace Safety and Prevention Services (WSPS) has recently posted a whole new playlist of videos full of tips for...



NOV29

Safe Travelling with Equine Guelph's New Resources

"A very near-accident with my horse trailer was a wake-up call for me," says Gayle Ecker, Director of Equine Guelph. "It showed me clearly that I didn't know what I didn't know about safety while trailering a horse! Hearing similar stories from others prompted me to propose this course



DEC21

Racehorse Lameness Prevention Kicks off Winter Online Learning Series!

Standardbred Canada (SC) is partnering with Equine Guelph, Ontario Racing and COSA to offer three online courses in winter of 2023 in priority healthcare areas of lameness, respiratory and gut health. Sponsored by SC, the Racehorse Injury/Lameness Prevention & Care course will be first off the gate in January of 2023...



JAN12

Equine Industry Symposium enhances understanding of the role of horses in human health and learning

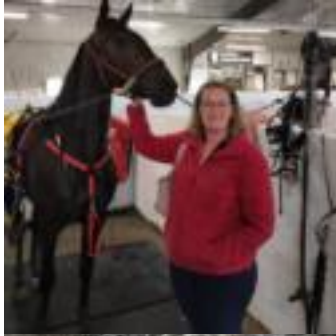
The annual Equine Industry Symposium shared the latest research and updates on the topic of horses in human health and learning with over 550 delegates attending over three sessions from November 21-23...



JAN12

Strong Support for Future Use of Stem Cells to Treat Equine Osteoarthritis

Two studies led by Dr. Judith Koenig and her team at the Ontario Veterinary College have shown equine pooled cryopreserved umbilical cord blood, (eCB) MSC, to be safe and effective in treating joint pain and inflammation...



JAN30

Ward Wins 2022 Racing Industry Scholarship

Equine Guelph announces Shawna Ward as the recipient of the 2022 Roger L'Heureux Memorial Equine Award. Selected for their love of horses, commitment to their welfare and desire to learn, winners of this tuition award receive two online courses through Equine Guelph valued at \$549 each (Certificates are available in Equine Science, Equine Welfare and...



JAN31

Equine Guelph talks Ulcers this February during Colic Prevention Education Month

The number one killer of horses, colic is a topic every horse owner wants to stay current on. Equine Guelph provides many ways for horse care takers to do just that with the Colic Risk Rater (www.TheHorsePortal.ca/ColicTool), a highly popular, free, online healthcare tool...



JAN31

Racehorse Gut Health & Ulcer/Colic Prevention Course Next Online Course!

Equine Guelph has partnered with Ontario Racing, Standardbred Canada and Central Ontario Standardbred Association to offer three online courses in winter of 2023. Sponsored by Ontario Racing, the Racehorse Gut Health & Ulcer/Colic Prevention course is the second course following hot on the heels of...



FEB21

Equine Guelph Drives Home Safety with Online Trailer Course

Planning on getting hitched in 2023? Equine Guelph is rolling out a brand-new online course March 6 – 20 on TheHorsePortal.ca – Horse Trailer Safety (Part One). "WAY too many private horse owners tell me 'they didn't know' after an incident with their horses and trailer/transport. Hauling horses is a serious responsibility," says Dr. Rebecca...



FEB22

Equine Asthma and Macrophage Responses

What happens if the quarterback of the immune system goes rogue? In a study set to begin in June 2023, Ontario Veterinary College researcher, Dr. Janet Beeler-Marfisi, will be looking at macrophage responses to the agents that cause asthma in horses. While studies on equine asthma have been ongoing for over 40 years, we still...



MAR1

Racehorse Respiratory Health is the Last Course in Winter Online Learning Series!

Equine Guelph has partnered with Ontario Racing, Standardbred Canada and Central Ontario Standardbred Association (COSA) to offer three online courses in winter of 2023. Sponsored by COSA, the Racehorse Respiratory Health course is the final course in this winter series...



MAR1

Vaccination Aiming for Optimal Immunity

April is coming and that means time for shots, right? While there are several core boosters that are annual, if you are looking to provide optimal immunity for your horse, a 'one and done' approach may not be the best fit. Each March, Equine Guelph declares the month as Vaccination Education Month and this year...



MAR7

Horse Portal Opens Course to Youth for Free

Sickness Prevention for Horses Begins with You! We all cough into our elbow to try to keep our germs to ourselves and we stay at home when unwell, but what if you are a horse? TheHorsePortal.ca course for Sickness Prevention in Horses is coming up faster than event season (and fly season)! For this March...



MAR14

An Online Portal to Unlimited Possibilities

Students and faculty from more than 40 countries around the world form the foundation of Equine Guelph's online community. Regardless of their academic backgrounds, their goals or their reasons for enrolling, students from different walks of life can adapt the courses to their specific needs and interests...



MAR20

How is your Horse Trivia?

Get your Fun Facts Published! Do you know why horses can sleep standing up? Did you know they don't have a gall bladder? Equine Connection and Equine Guelph are partnering on an online educational initiative, "Who Knew? Fun Facts & Why it Matters." You can have your little-known horse fact printed in a new E-book...



APR4

OEEEEP is Back and Better Than Ever!

The Ontario Equine Education and Employment Program provides hands-on training and helps with job placement for future employees. The Ontario Equine Education and Employment Program was a rousing success last year and is back for 2023, allowing barn owners to find educated employees for their operations, and enthusiastic grads to find meaningful and stimulating employment within the industry...



APR11

OEEEEP Returns: Training Employees for Horse Industry Careers

The Ontario Equine Education and Employment Program is in its second year of preparing participants for equine jobs – for free. The Ontario Equine Education and Employment Program ...



APR25

Can-Am Draws Record Crowd and Raises Funds for Equine Guelph

A record crowd was welcomed by Can-Am All Breeds Equine Expo debuting at their new Ancaster Fair location after a pandemic hiatus postponed the event for the last three years. 10,000 people came through the turnstiles for the three-day event...



APR26

Positive Reinforcement

Equine Guelph 20th Anniversary Special Feature Licensed Driving Coach and retired science teacher, Gillian Allan has plenty of positive things to say about Equine Guelph's online 12-week courses. She has taken them all! During what is now Equine Guelph's 20th anniversary year of offering award-winning online courses for the horse industry ...



APR27

Biosecurity Research Findings – More than Just Vaccination

In a new University of Guelph study at the Ontario Veterinary College, preliminary findings reveal that a perception exists among horse owners and some event organizers viewing vaccination as a ‘bullet-proof’ intervention that will protect their horse from ailments ...



APR27

Annual Investment in Large Animal Emergency Rescue Training

For the past three years, Hamilton Mounted Police have sent their officers to receive hands on training at Large Animal Emergency Rescue Training workshops provided by Equine Guelph. They fully appreciate the value of practicing successful outcomes...

Summary of Highlights

Equine Guelph is now celebrating 20 years as the Centre for the horse owner at the University of Guelph!

Based on feedback from our Council, our partners, our students and our donors, programs are continuing to grow and develop. The research program of this year has led to important progress in knowledge about health and disease and we continue to send out this information to the industry through a growing number of channels as part of our communications of new information to the industry, including to our Council members for their opportunity to in-turn to distribute to their members. This new evidence-based knowledge is also included in our educational courses with our ongoing upgrading and updating for the 12-week courses and the Portal courses. Industry professional or novice, this ongoing distribution of new knowledge supports the industry at all levels, including owners, trainers, veterinarians, recreational horse owners, and youth. The new promotions for our 20th anniversary year, will bring even more awareness of the value of our programs for the industry and to the public, encouraging more people, young or old, new, or experienced, to join our learning community.

It is exciting to see that the national and international coverage of Equine Guelph programs has continued to grow in 2022-23. This is a promising indicator of the recognition by the greater horse industry of the valuable programs of Research, Education and Communications programs today.

Equine Guelph, as a pioneer in the development of online courses since 2002, continues to be an acknowledged leader in Canada and beyond, for the offering of 20 online courses leading to UofG certificates and a diploma. There are also over a dozen (with more on the way such as the Trailing Your Horse - Part 2) short courses offered for industry participants, including racing-specific courses. The potential for growth in this area is promising, particularly with increased industry involvement along with promotion to their membership at all levels. These new and enhanced partnerships in the industry will help extend opportunities for learning as we work together to provide critical employment, training, and educational pathways. Currently, with the growing need for qualified, knowledgeable staff, the work of Equine Guelph continues to play an important role in our industry and the ongoing Ontario Equine Education and Employment Program, now in its second year, along with Equine JobTrack and TheHorsePortal.ca courses are three related, major initiatives that provide much needed programming but requires ongoing industry support.

Encouraging new entrants to our horse industry is a priority goal for every horse association in Canada, as we see mounting pressures from operating costs, diminishing land for horse facilities and hay production, and many more. Working together as an industry across Canada has never been more important and Equine Guelph has been working to maintain, enhance and increase partnerships in this effort.

Equine Guelph acknowledges and sincerely thanks the members of the Advisory Council and funding/supporting partners: Quarter Racing Owners of Ontario, Inc., Equestrian Canada, the Horsemen's Benevolent and Protective Association of Ontario, the E.P. Taylor Equine Research Fund, Standardbred Canada, Ontario Equestrian, Central Ontario Standardbred Association, Standardbred Owners Association of Ontario, Canadian Thoroughbred Horse Society, the Ontario Ministry of Agriculture, Food and Rural Affairs, the Ontario Harness Horse Association, the Alcohol and Gaming Commission of Ontario, Ontario Racing, the Ontario Veterinary College,

and the University of Guelph. We also thank our wonderful and dedicated donors and sponsors who help us cover costs for ongoing administration and program development.

Appendices

Appendix 1: Current Equine Guelph Advisory Council

**Al Patterson, Co-Chair
Industry Member at Large**
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qtfarm@allstream.net

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Tracey McCague-McElrea
Ontario Equestrian**
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**Bob Broadstock
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Industry Development Program**
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Fax: (905) 426-7093
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**Dean Jeffrey Wichtel, Co-Chair
University of Guelph**
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Guelph, ON N1G 2W1
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Appendix 2: Equine Guelph Partners



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Appendix 4: Research Projects for 2022-2023

New Projects in 2022-23:

Investigator	Title
Arroyo, L.	Screening for biomarkers indicators of intestinal health among the equine microbiota
Beeler-Marfisi, J.	Macrophage responses of healthy and severely asthmatic horses to agents that exacerbate equine asthma
Changoor, A. and Koenig, J.	Evaluation of Non-invasive Electroarthrography to Predict Cartilage Quality in Equine Osteoarthritis
Chenier, T.	Efficacy of an Oral Supplement Containing Omega Fatty Acids for Treatment of Persistent Breeding-Induced Endometritis (PBIE) in Mares.
Cote, N.	Evaluation of factors contributing to upper airway obstruction through repeated resting and dynamic respiratory endoscopies in 2-year-old Standardbreds
Gomez, D.	Fecal and serum metabolome and fecal bile acids and D-lactate concentrations in healthy horses and horses with colitis.
Gomez, D.	Cardiovascular effects of rapid and slow intravenous administration of sodium penicillin in horses undergoing exploratory laparotomy for colic: A randomized clinical trial.
Pearson, W.	New insights into immunomodulatory effects of Spirulina in vitro, and on local and systemic response to high-intensity exercise in horses
Avison, A.	Cardiac dysfunction and sudden death in horses

Continuing Projects:

Investigator	Title
Arroyo, L.	Comparative Anatomy: Equine Pulmonary Arterial Structure and Function
Arroyo, L.	The longitudinal development of the fecal microbiome and metabolome in neonatal foals
Arroyo, L.	Improving fecal transplantation in horses: determining optimal conditions for preparation and storage
Arroyo, L.	Investigation of Clostridium innocuum in horses with diarrhea
Arroyo, L.	Hyperimmune plasma transfusion for the prevention of R. equi infections in foals

Arroyo, L.	The association of Equine Parvovirus-Hepatitis (EqPV-H) with Theiler's disease and the prevalence of EqPV-H DNA and antibodies in horses in Ontario
Arroyo, L.	Dynamics of vitamin D metabolites in healthy and hospitalized horses with enterocolitis
Beeler-Marfisi, J.	The relationship between EIPH and exposure to ambient air pollution in Thoroughbred and Standardbred racehorses
Beeler-Marfisi, J.	Identification of putative exercise-induced pulmonary hemorrhage causing variants in Ontario's Thoroughbred racehorses
Chenier, T.	Do mast cells play a role in persistent breeding-induced endometritis in the mare?
Cribb, N.	Ultrasound examination for assessment of closure of the nephrosplenic space in horses
Gomez, D.	Fecal Microbiota of Surviving and Non-surviving Horses with Acute Diarrhea
Gomez, D.	Hypotonic versus isotonic maintenance fluids in critically ill foals
Gomez, D.	Endothelial glycocalyx degradation in critically ill foals
Gomez, D.	Enteroinsular axis in healthy horses and horses with gastrointestinal diseases during hospitalization
Koch, T.	Enhancement of Immune-Modulatory Properties of eCB-MSCs
Koch, T.	Assessment of safety of encapsulated MSC and pooled MSC in fetlock joints
Koch, T.	Assessment of safety and potential of antisense miRNA-181 to treat fetlock OA
Koch, T.	Mesenchymal stromal cells for the treatment of equine tendonitis
Koenig, J.	Mesenchymal stromal cells for the treatment of equine osteoarthritis
Koenig, J.	Cone beam CT technique development to image the standing horse cervical spine.
Koenig, J.	Effect of Extracorporeal Shock Wave Therapy on Intracellular Stress and Immunomodulatory Function of Equine Umbilical Cord Blood Mesenchymal Stromal Cell in vitro
Valverde, A.	Comparison of two intraoperative lidocaine constant rate infusions on cardiorespiratory function and quality of recovery in healthy isoflurane-anesthetized horses undergoing elective surgery
zur Linden, A.	Equine Pulmonary Biopsy: Improving Safety and Efficacy

Appendix 5: Lay Summaries of Research Projects for 2022-2023

New Projects:

Arroyo, L. - Screening for biomarkers indicators of intestinal health among the equine microbiota

Intestinal diseases are the leading cause of mortality in horses. Recently, the intestinal microbiota has been shown to be essential to the health of the host. Marked changes in the intestinal microbiota (dysbiosis) are present before and during the outset of diseases and after treatment with antibiotics. New technologies such as next generation DNA sequencing (NGS) are reliable to characterize changes in the microbiota, but are relatively expensive, have a long turnaround time and require complex bioinformatic analyses. Specific bacterial markers are currently being used in other species to accurately predict intestinal dysbiosis. For example, increased Enterobacteriaceae and the decreased Lachnospiraceae are constantly observed along with intestinal inflammation. This study will find and validate key bacteria that could be measured by real time PCR (qPCR), which is quicker and cheaper than DNA sequencing. The objective is to identify potential markers of intestinal dysbiosis to be used as an alternative to DNA sequencing to detect dysbiosis in horses, allowing early treatment and closer monitoring of those animals.

Beeler-Marfisi, J. - Macrophage responses of healthy and severely asthmatic horses to agents that exacerbate equine asthma

Severe equine asthma (SEA) is the most common non-infectious inflammatory airway disease of mature horses. This disease causes decreased athletic ability and with progression may lead to euthanasia. Severe equine asthma is caused by exposure to airborne dusts found in the barn, including fungal spores, LPS and inorganic particulates, such as silica from soil (challenge material, Beeler-Marfisi et al. 2010). Although studied for decades, it remains unclear why some horses develop SEA while others with the same dust exposure do not. Alveolar macrophages (AMs) are the first line of defence in the lung and during inflammation, are supplemented by monocyte-derived macrophages (MDMs). Broadly speaking, AMs and MDMs are classified as pro- or anti-inflammatory based on expression of cell surface markers including CD163 and CD206, as well as patterns of protein production. In previous work comparing healthy and SEA-affected horses (Kang et al. 2021), we noted that AMs from asthmatic horses had a different immunophenotype to healthy horses suggesting a relationship between this altered immunophenotype and lung inflammation. Therefore, we believe that differences exist in AM and MDM immunophenotype and other cellular responses between healthy and SEA-affected horses which will explain why some horses become asthmatic while others do not.

Changoor, A. & Koenig, J. - Evaluation of Non-invasive Electroarthrography to Predict Cartilage Quality in Equine Osteoarthritis

Osteoarthritis (OA) is the most common cause of lameness in horses and is characterized by progressive and irreversible cartilage degradation. Cartilage is the thin tissue that lines the ends of bones in joints and normally enables pain free movement. Early recognition of OA is important to be able to treat and potentially prevent disease progression. Veterinarians could benefit from having a way of identifying cartilage changes that would allow them to objectively monitor OA. Electroarthrography (EAG) is an innovative technology that evaluates cartilage through sensors placed on skin around a joint, such as the equine fetlock. This is similar to the way heart health can be understood using electrocardiography. The proposed research aims to improve EAG collection to make it easier to use in the clinic, as well as evaluate the ability of EAG to follow OA

progression and treatment in an equine fetlock (metacarpophalangeal) model of early OA. We hypothesize that we can streamline EAG collection by creating a read-to-wear device and that EAG will be able to detect cartilage changes over time and show a relationship to magnetic resonance imaging (MRI) and direct observations of cartilage quality using arthroscopy. This research will be the first to demonstrate that non-invasive EAG can be used in a clinical setting to monitor cartilage health and we anticipate EAG will produce comparable results to MRI. Achieving the study aims would provide a critical link to further develop EAG into a sensitive diagnostic method that could be deployed at the point-of-care and dramatically improve how OA is assessed and treated in horses.

Chenier, T. - Efficacy of an Oral Supplement Containing Omega Fatty Acids for Treatment of Persistent Breeding-Induced Endometritis (PBIE) in Mares

Reproductive efficiency in horses is generally low, for a variety of reasons, including infertility caused by uterine disease. Endometritis is the third most common medical condition encountered overall in equine veterinary practice (Traub-Dargatz et al. 1991), and approximately 60% of mares affected by endometritis are barren (Overbeck et al. 2011). Causes of endometritis include acute bacterial infections, chronic infections, and persistent breeding-induced inflammation (PBIE). PBIE is characterized by a prolonged inflammatory response following breeding, leading to early embryonic loss and infertility. A normal, transient inflammatory response occurs post-breeding; however, in a subset of susceptible mares, this inflammation persists. One study identified PBIE in 43% of a mixed population of mares and found a lower pregnancy rate in affected mares compared to normal mares (49% versus 62%; Newcombe 1997). Given the large number of horses in the breeding sector both in Ontario and Canada as a whole, endometritis and more specifically PBIE, causes a significant economic impact to both the Canadian and Ontario breeding industries. Cytokines are proteins produced by cells that have an effect on the immune system to fight disease. The uterine inflammatory response can be characterized by alterations in these cytokines. Levels of both pro-inflammatory and anti-inflammatory cytokines are different between PBIE-susceptible versus normal mares.

Monitoring cytokines in the uterus can help evaluate the effectiveness of treatments for PBIE. Treatment approaches used in mares with PBIE include uterine lavage and oxytocin to remove fluid in the uterus, drugs to suppress the immune response such as dexamethasone, and mycobacterial cell wall extract to suppress inflammation. More recently, uterine infusion of platelet rich plasma has been shown to reduce fluid accumulation and inflammation in affected mares. Omega-3 fatty acids (FA) inhibit production of both acute and chronic inflammatory cytokines, showing benefit for treatment of inflammatory diseases in humans and horses. In a recent study, Omega-3 FA supplementation reduced the time for the uterus to shrink after foaling. In a different study, mares fed Omega-3 fatty acids had less uterine fluid and inflammation after breeding. It appears that correcting the altered inflammatory response in mares with PBIE may be an effective approach to treatment. This study will compare uterine lavage, uterine infusion of platelet-rich plasma and oral supplementation with Omega-3 fatty acids, as treatments in mares with PBIE. Levels of several inflammatory proteins (cytokines) in the uterus will be evaluated, and clinical signs of endometritis will be assessed. The benefits of this study include potential identification of a new, effective therapy for PBIE in mares, resulting in reduced antibiotic use, improved fertility and improved understanding of this important condition.

Cote, N. - Evaluation of factors contributing to upper airway obstruction through repeated resting and dynamic respiratory endoscopies in 2-year-old Standardbreds

Identification of upper airway abnormalities at the beginning of a racing career may predict future airway obstruction and therefore the productive performance of the horse. It has been demonstrated that endoscopy at rest is not a sufficient means of evaluating underlying upper airway pathology. Therefore, a combination of resting and dynamic endoscopies is recommended to fully evaluate the upper respiratory system. It is well described in the literature that abnormalities found during post-sale endoscopies are negative predictors for future racing performance (e.g., lower earnings). Currently, it is unknown the number of yearlings racehorses that develop upper airway problems during their careers despite normal resting and dynamic endoscopic evaluation post-sale. Proposed predisposing factors for the development of upper airway disease include viral infection, pharyngeal lymphoid hyperplasia (PLH), lower airway inflammation (LAI), and exercise-induced pulmonary hemorrhage (EIPH). However, contradictory results have been reported in the literature and currently it is unknown what the contributing factors are in these individuals for the development of upper airway problems. A prospective longitudinal cohort study is needed to evaluate the number of horses that develop upper airway diseases and the contributing factors on the development of those diseases. Performing periodic resting and dynamic endoscopies may predict the development of upper airway disease and help identify factors that may play a role in their development. Furthermore, changes to the appearance of the upper airway in these young racehorses may occur under the influence of exercise and as they mature.

Gomez, D. - Fecal and serum metabolome and fecal bile acids and D-lactate concentrations in healthy horses and horses with colitis

Colitis (inflammation of the colon resulting in diarrhea) is a serious disease in horses with high rates of morbidity and mortality. Infectious agents causative of colitis include bacteria, virus and parasites. Microbiological evaluations of feces from diarrheic horses revealed an association between some gut bacteria communities and the development of the diarrhea and the mortality of horses with colitis. However, the metabolites produced by bacteria during colitis are unknown as well their association with disease severity (i.e., mortality). Investigation of the metabolic-end products of bacterial activity will help to elucidate the significance of gut bacteria communities during inflammation of the gut. Therefore, the aim of this study is to examine the fecal and serum metabolites and fecal bile acids concentrations of healthy horses and horses with colitis. This research will combine several microbial and metabolic parameters to uncover the complex relationships between bacteria and gut inflammation in diarrheic horses especially in those that succumb to disease. The discovery of these novel relationships will enable the progress of targeted and individualized animal health care to improve disease prognosis and welfare.

Gomez, D. - Cardiovascular effects of rapid and slow intravenous administration of sodium penicillin in horses undergoing exploratory laparotomy for colic: A randomized clinical trial

Perioperative antimicrobial prophylaxis is recommended in horses with colic that undergo abdominal corrective surgery. Current recommendations include administering antimicrobials drugs within 60 min before surgery and readminister time-dependent antimicrobial drugs, such as sodium penicillin, every 60 minutes after the first dose if the surgery is still ongoing. However, compliance with re-administration is usually not followed because intravenous administration of sodium penicillin in anesthetized horses is associated with a decrease in arterial blood pressure, often already present in compromised colic horses, and can result in multiple systemic complications, including death. In healthy anesthetized horses, the decrease in arterial blood

pressure caused by sodium penicillin administration is usually transient and of less clinical impact, although its severity is thought to depend on the speed of administration. The effect of sodium penicillin and the speed of administration on arterial blood pressure in horses with compromised cardiorespiratory function, such as colic, have not been investigated. Thus, the benefit of proper antimicrobial treatment has been outweighed by the risk of affecting cardiovascular function, without a proper assessment of this situation in a clinical scenario.

The objective of this study is to compare the cardiovascular effects of rapid versus slow intravenous intraoperative administration of sodium penicillin in horses undergoing exploratory laparotomy for colic.

Pearson, W. - New insights into immunomodulatory effects of Spirulina in vitro, and on local and systemic response to high-intensity exercise in horses

Inflammation and its associated oxidative stress have complex, dualistic adaptive and maladaptive effects on exercise performance, exercise recovery, and acclimation to repeated exercise bouts (i.e., 'training effect'). When these dualistic roles are in balance, exercise-induced inflammation imparts a net benefit to the training effect; however, when it exceeds adaptive capacity of tissue, degenerative inflammatory conditions such as arthritis can result. Dietary ingredients with the potential to dampen inflammation may reduce the incidence of exercise-induced tissue damage and degenerative disease but may also interfere with exercise recovery and training effect. Spirulina (*Arthrospira* sp.) is a nutrient-dense feed supplement with the potential to support robust health and optimize exercise performance in horses. Beyond just classical nutrition, Spirulina has marked antioxidant, anti-inflammatory, and immunomodulatory activities in various inflammatory conditions, including the inflammatory condition of exercise. These effects have not been shown in horses, and equine-specific downstream effects of Spirulina on local (cartilage) and systemic adaptation to exercise stress is not known.

The purpose of the proposed study is to: 1) quantify direct, dose-dependent in vitro effects of Spirulina on cartilage explants responses to hypoxic and impact strain with respect to biomarkers of inflammation (IL-1 β , IL-6, TNF α , PGE $_2$), inflammation resolution (RvD1), cartilage turnover (GAG, CS846), and oxidative stress (total antioxidant status, catalase, SOD activity) 2) determine whether the observed in vitro effects are also observed in spirulina-supplemented horses during exercise recovery. This study will result in new information pertaining to the direct effect of Spirulina on cartilage and muscle health, and to its application in optimizing systemic and local adaptation to high-intensity exercise in horses.

Avison, A. - Cardiac dysfunction and sudden death in horses

Fatality among equine athletes is a rapidly growing concern with respect to animal welfare, ethical considerations, human safety, and public perception of equine sports.

Emerging evidence by our group supports cardiovascular disease –specifically cardiac arrhythmias and conduction disturbances –as a significant and under-recognized factor. The contribution of arrhythmias to racehorse fatalities is difficult to quantify and is often a presumptive diagnosis of exclusion owing to the inability to assess cardiac function after death. In addition to concerns regarding fatalities, there is ongoing public and industry unease about exercise-induced pulmonary hemorrhage (EIPH) and the use of race-day medication (Lasix®, furosemide). It is widely accepted that non-fatal arrhythmias are often identified during exercise or in the immediate post-exercise period in apparently normal equine athletes. However, their frequent detection does not negate their possible significance. Small or transient increases in pulmonary vascular pressure due to such rhythm disturbances may be the underlying cause or a contributor to EIPH in many horses. Therefore, the overall contribution of cardiac dysfunction to equine mortality remains unknown.

Continuing Projects:

Arroyo, L. - Comparative Anatomy: Equine Pulmonary Arterial Structure and Function

During their career, more than 80% of racehorses can be expected to develop Exercise-Induced Pulmonary Haemorrhage (EIPH). This disease, which occurs mainly in the most upper and rearward region of the lungs, is characterized by blood leaving the microvasculature of the lungs and entering the airways. The management and treatment of EIPH has a substantial economic impact to the equine industry, with the cost of treating EIPH estimated to exceed \$100 million annually in the United States alone. The cause of EIPH has not been determined, consequently current treatment and mitigation measures are empiric and speculative. There is intense interest in understanding the relationship between the anatomy and mechanical properties of the large arteries and the manifestation of microvascular diseases in humans. Arterial anatomy and elasticity determine the nature of the pulse wave which transmits pulsatile energy to the microvasculature. Pulse wave energy transmission is viewed as a fundamental aspect underlying the development of microvascular diseases. Studying the pulse wave in horse lungs is an important step in understanding what causes EIPH and will improve the potential to develop effective treatment outcomes and mitigation strategies. Detailed knowledge of the physical dimensions (anatomy), mechanical properties (strength, elasticity) and structural composition of arteries is required. This information is poorly described or unknown for the equine pulmonary vascular system. Comparative information between these properties in lung regions typically affected and unaffected by EIPH will be obtained from five horses and analysed for differences which will guide continued research into the cause of EIPH

Arroyo, L. - The longitudinal development of the fecal microbiome and metabolome in neonatal foals

Neonatal diarrhea is a common occurrence in foals that can develop into a life-threatening condition. However, at present the etiology is poorly understood and it is unclear why diarrhea progresses in some foals whereas others recover without additional symptoms. The microbial environment within the neonatal gut rapidly becomes colonized following birth. However, several factors influence the particular microbes that are present such as location, maternal diet, and even breed, making comparisons between individuals challenging. Therefore, the metabolic activity of gut microbes may provide a more analogous comparison and improve our understanding of bacterial function at this critical stage of gastrointestinal development. Integrating both microbial and metabolic data will enable a comprehensive understanding of how the gut environment matures in horses and what key aspects denote health. This research will also begin to reveal potential deviations from health that occur during critical bouts of diarrhea in foals. Understanding the gut microbial development in foals will advance the field of equine neonatal care and move it towards personalized treatments and therapeutics.

Arroyo, L. - Improving fecal transplantation in horses: determining optimal conditions for preparation and storage

The development of new DNA sequencing technologies has revealed that the interaction between intestinal bacteria and the host is extremely important to health maintenance. In fact, an altered composition of the intestinal bacteria (called dysbiosis) is present in horses with intestinal diseases such as colitis and colic and during treatment with antimicrobial drugs. The correction of dysbiosis to decrease inflammation and to resolve diarrhea faster. Different methods can be attempted to resolve dysbiosis including probiotics, supplements, or fecal microbiota transplantation (FMT), which is the transferring of all microorganisms and metabolites present in the feces of a healthy donor to a sick patient. FMT has been used with great success in humans

and dogs, resolving over 95% of cases of diarrhea in people with *Clostridioides difficile* infection, which is also a leading cause of diarrhea in horses. FMT has been given to horses with diarrhea, but so far, scientific evidence indicates that FMT is not so efficient in horses. Our preliminary data show that the current recommendations of FMT to correct dysbiosis in horses has no evident impact on the microbiota of horses. This might be related to the fact that FMT cannot be given by enema, as in other species, because of the horse's anatomy and the administration via nasogastric tube drastically decreases the viability of the transferred bacteria. Furthermore, it has been shown that over 80% of the bacteria present in feces die during FMT preparation because of exposure to Oxygen and freezing. Therefore, increasing bacterial viability in the transplanted solution is fundamental to improve FMT efficacy in horses. The objectives of this study are to optimize bacterial viability of FMT using anaerobic conditions and to identify microbiota patterns associated with higher resistance to storage.

Arroyo, L. - Investigation of *Clostridium innocuum* in horses with diarrhea

Typhlocolitis in horses is, by definition, inflammation of the cecum and colon, and diarrhea is the hallmark clinical sign of this intestinal disorder. Despite comprehensive microbiological investigative efforts to determine the cause of colitis, an etiological agent cannot be established for a large proportion (>60%) of these cases. A recent study reported *Clostridium innocuum* as a potential causative agent of antibiotic associated (AAD) diarrhea in human patients. Clinically, in people it is characterized by diarrhea or severe colitis, including the most severe pseudomembranous colitis form. *C. innocuum* has been also associated with recurrent diarrhea in patients with prior *C. difficile* infection, and other forms of severe disease including bacteremia, endocarditis, and abscesses. The isolation of *C. innocuum* from stool samples of human patients with suspected *C. difficile* infection led to the hypothesis that this organism may play a similar role as *C. difficile* in causing antibiotic associated diarrhea. Therefore, the aim of this study to investigate whether *C. innocuum* is present in fecal or intestinal contents of horse with colitis.

Arroyo, L. - Hyperimmune plasma transfusion for the prevention of *R. equi* infections in foals

Rhodococcus equi causes severe pneumonia in foals worldwide as well as other forms of extrapulmonary infections that are also severe. Foals acquire the infection shortly after being born which makes prevention of this disease difficult. Administration of *R. equi*-specific hyperimmune plasma (HIP) intravenously is the only form of prophylaxis available, as a vaccine does not currently exist. While it does not prevent infection, HIP administration has been shown to decrease severity of pneumonia in newborn foals experimentally challenged, although the protective mechanism of HIP remains poorly understood. The aim of this study is to determine the clinical usefulness of HIP administration under field conditions in Canada, as this has not been previously evaluated.

Arroyo, L. - The association of Equine Parvovirus-Hepatitis (EqPV-H) with Theiler's disease and the prevalence of EqPV-H DNA and antibodies in horses in Ontario.

Theiler's disease (TD) (aka: equine serum hepatitis) is an acute or subacute hepatitis of horses and is one of the most commonly recognized causes of acute hepatic failure in adult horses. The disease is sudden in onset and rapidly progresses with death occurring within 24-48 hours. Up to 80% of affected horses show signs of hepatic encephalopathy (head pressing, aimless walking, yawning). Horses that develop hepatic encephalopathy have a grave prognosis. The majority of cases occur 4-10 weeks after the administration of an equine biologic ("biologic-associated TD") with the most common biologic being tetanus antitoxin. The administration of equine serum or plasma has also been implicated. In some cases, it has been observed there are horses affected that have not been treated with any equine biologic ("non-biologic associated TD"), and this led to the suggestion that an infectious and possibly contagious agent may be involved. A virus similar

to the human hepatitis viruses was considered to be the most likely cause. Since 2011, three novel flaviviruses have been reported to be associated with equine hepatic disease. These include non-primate hepacivirus (NPHV), also known as equine hepacivirus (EqHV), equine pegivirus (EPgV) and Theiler's disease-associated virus (TDAV). Of these viruses only NPHV has been shown to be hepatotropic in the horse. In 2018, a novel equine parvovirus, designated equine parvovirus-hepatitis (EqPV-H) was identified in the serum and liver of a horse that died of Theiler's disease 65 days after treatment with equine origin tetanus antitoxin (TAT). This virus was also found in the administered TAT and it has been suggested that EqPV-H can cause Theiler's disease in horses. EqPV-H had been detected in horses suffering from liver disease in Ontario, therefore, the objective of this study is to determine the prevalence of the virus in a subset of horses in Ontario.

Arroyo, L. Dynamics of vitamin D metabolites in healthy and hospitalized horses with enterocolitis

Equine enterocolitis (diarrhea, colitis) is a major cause of morbidity and mortality worldwide. Consequences of equine colitis include loss of hormonal control, metabolic/ electrolyte / fluid derangements, and organ failure. Vitamin D has a multitude of functions, including regulation of calcium and phosphorus, promotes bone health, controls the immune system, and reduces inflammation. Low vitamin D levels have been linked to mortality in sick people. There is no information on how the blood levels of vitamin D change in sick and healthy adult horses and whether these changes are associated with other hormones, inflammatory factors, and mortality in hospitalized horses with colitis. The goal of this study is to determine whether changes in vitamin D during hospitalization of horses with colitis are associated with laboratory abnormalities, disease severity and outcome.

Beeler-Marfisi, J. - The relationship between EIPH and exposure to ambient air pollution in Thoroughbred and Standardbred racehorses

Worldwide, the prevalence of exercise induced pulmonary hemorrhage (EIPH) is estimated between 44% to 85% of Thoroughbred (TB), and up to 87% in Standardbreds (SB) racehorses. The condition is important to Ontario racing because affected horses are suspected to have shortened racing careers, and in rare instances, may suffer sudden death from massive hemorrhage. EIPH is caused by stress failure of capillaries in the caudodorsal lung, secondary to repeated high-intensity work. However, Veterinarians who regularly assess racehorses by tracheobronchoscopy at Woodbine and Woodbine-Mohawk Park (Mohawk) racetracks in Ontario, Canada are concerned that their proximity, respectively, to Lester B. Pearson Airport and a major highway is exposing racehorses to excessive air pollution, which might contribute to development of EIPH. Two previous studies showed a relationship with EIPH and cooler temperature, but studies on air pollution and EIPH are lacking. The provincial and federal governments have air quality monitoring stations and weather stations located close to Woodbine and Mohawk. These collect air pollution data including nitrogen dioxide (NO₂), ozone (O₃) fine particulate matter less than 2.5 microns in diameter (PM_{2.5}), and temperature data.

Beeler-Marfisi, J. - Identification of putative exercise-induced pulmonary hemorrhage causing variants in Ontario's Thoroughbred racehorses

Exercise-induced pulmonary hemorrhage (EIPH) is a common disease affecting up to 80% of training and racing Thoroughbreds (TBs). EIPH refers to bleeding within the lung during exercise and is diagnosed by visualizing blood in the trachea by endoscopic examination after work. The disease is caused by stress failure of the lung's capillaries during intense exercise from increased capillary pressures in what should otherwise be a low-pressure organ. Additionally, for unknown reasons, severely affected horses can suffer fatal bleeding into the lungs during high-intensity work. In 2001, the Alcohol and Gaming Commission of Ontario, developed the Equine Incidences

in Ontario Racing program, and mandated that any horse dying during or within 60 days of a race must undergo post-mortem examination. From 2003-2015, pulmonary hemorrhage and EIPH were determined as the cause of death in 76% of all sudden death cases, representing 37% of all sudden deaths in TB racehorses. Therefore, the disease is important to the racing industry not only as a cause of poor performance but also for its negative impact on the health and welfare of the horse, and the distress it causes to the general public and the people involved with the affected animal. Genetics were shown to have a moderate to high role in determining whether a TB will develop EIPH. As such, there may be genetic markers, or variants, within the TB genome that are associated with the development of EIPH. These variants could be used to identify horses at high risk of developing EIPH or fatal EIPH; however, these variants have yet to be discovered. In this study, we will identify genetic markers of EIPH using whole-genome sequencing of DNA from TBs with fatal EIPH. Our long-term goal is to identify and verify these EIPH-causing variants, with the aim of developing a genetic test, which could be used to inform breeding and training decisions in genetically predisposed TBs.

Chenier, T. - Do mast cells play a role in persistent breeding-induced endometritis in the mare?

Over 18% of Ontario's 212,000 horses are designated as breeding stock, and reproductive health is critical to the economic success of the industry. Reproductive efficiency in horses is generally low, for a variety of reasons, including infertility caused by uterine disease such as endometritis. Endometritis is the third most common medical condition encountered overall in equine veterinary practice and approximately 60% of mares affected by endometritis are barren. One type of endometritis, persistent breeding induced endometritis, or PBIE, occurs in mares that have an abnormal inflammatory response after breeding. Up to 43% of broodmares suffer from this condition, depending upon the study and the definition used. Given the large number of horses in the breeding sector in Ontario, endometritis and more specifically PBIE, causes a significant economic impact to the breeding industry. One type of inflammatory cell, the mast cell, may play a role in PBIE. While mast cells are generally thought of as inducing allergic reactions, they are also involved in many chronic inflammatory conditions and can induce fibrosis. Both of these occur in PBIE-affected mares. This study will determine the number of mast cells in the endometrium of PBIE-affected and unaffected mares and evaluate whether cell numbers change in response to artificial insemination. A better understanding of the abnormal inflammation that occurs in PBIE-affected mares will lead to new and improved treatments for this important condition that causes infertility.

Cribb, N. - Ultrasound examination for assessment of closure of the nephrosplenic space in horses

Currently, preventative laparoscopic surgery for nephrosplenic entrapment colic is the recommendation for horses to reduce the risk of disease of this type. The technique is well established but 2 recent reports in the scientific literature have highlighted our lack of knowledge of aspects of this surgery. The papers have highlighted that firstly, we currently do not know how long the preventative effects from the surgery last, and, secondly, we do not know whether the outcome from the surgery can be evaluated by ultrasound examination. In our research herd, there are 12 horses that have recently undergone closure of the nephrosplenic space by the PI. It is our aim to follow these horses for up to 3 years following their surgery to determine whether the adhesions last this length of time. These findings will be correlated with a concurrent ultrasonographic examination to see if this imaging modality can be used to determine closure of the space.

Gomez, D. – Fecal Microbiota of Surviving and Non-surviving Horses with Acute Diarrhea

Acute diarrhea is a major cause of morbidity and mortality in horses worldwide. In Ontario, the mortality rate of diarrheic horses hospitalized at the Ontario Veterinary College is 35% (n = 75/216) from which Thoroughbred and Standardbred breeds represented approximately 50% of the cases. Several pathogens are associated with acute diarrhea in horses; however, the final cause of the diarrhea is commonly not identified. Some studies showed that the bacterial communities of the gut are distorted in horses with diarrhea, those studies included a small number of cases, and therefore the impact of gut bacteria changes on clinical outcomes such as mortality and the key bacteria associated with a healthy gut or diarrhea remains generally unidentified. Therefore, larger clinical studies using newly developed statistical methods are needed to address these knowledge gaps, and better understand the bacterial changes that occur during diarrhea in horses. This study aims to investigate the differences in the gut bacterial communities between healthy and horses with acute diarrhea. Additionally, this study will examine the gut bacterial communities of surviving and non-surviving diarrheic horses. We hypothesize that the gut bacterial communities are significantly different in horses with colitis compared to healthy control horses, and that the gut bacterial communities are particularly distinct in diarrheic non-surviving horses. Elucidating the importance of the gut microbiota in the development of diarrhea and subsequent mortality of horses have clinical implications.

Gomez, D. – Hypotonic versus isotonic maintenance fluids in critically ill foals

Critically ill foals often receive maintenance intravenous fluids (IVFs) to correct and maintain normal hydration once the initial fluid resuscitation therapy has finished. Historically, administration of low-sodium (hypotonic) fluids as opposed to fluids with sodium concentration similar to those in the blood (isotonic fluids) was recommended. This practice was extrapolated from guidelines developed for healthy children in 1950s. However, this recommendation has recently been questioned in human medicine because some children can develop life-threatening low blood sodium levels. Thus, the use of isotonic fluids has increased for maintenance of hydration in ill children while the use of hypotonic fluids declined. Despite this, the current veterinary literature continues recommending hypotonic solution for maintenance IVFs in sick foals. This approach can be adequate in some cases because anecdotal reports suggest that administration of isotonic fluids to foals could lead to complications such as high levels of sodium in blood, fluid accumulation in the body, and increased blood pressure. However, these recommendations lack of evidence-based support. The objective of this study is to compare the effect of isotonic versus hypotonic maintenance fluid therapy on blood sodium concentrations, cardiovascular variables, sodium-regulating hormones, and urine production in critically ill foals. Results of this study are expected to provide data to support evidence-based protocols and the development of guidelines for fluid therapy in critically ill foals.

Gomez, D. – Endothelial glycocalyx degradation in critically ill foals

The endothelial glycocalyx (EG) is a thin gel-like layer covering the internal surface of blood vessels that regulates the transport of fluids, proteins oxygen and nutrients to the tissues. The EG also provides anticoagulant effects and protects the blood vessels from toxic insults. Damage to the EG occurs when the blood supply to the tissue is compromised, in inflammation, and in patients with localized or blood-borne infections. In human medicine, there is increasing evidence that administration of large volume of fluids during resuscitation of critically ill patients damage the EG, even more than the disease itself. Increased blood levels of markers associated with EG damage are also associated with increased risk of death. Administration of resuscitation intravenous fluid is one of the most important interventions in the management of critically ill foals presented to referring hospitals. However, no information is available regarding the blood levels of markers associated with EG damage in critically ill foals, their association with mortality and

the impact of resuscitation fluid on the EG degradation. Therefore, the objective of this study is to determine the blood levels of EG damage markers in critically ill foals, before and after fluid resuscitation to determine whether this practice can worsen the integrity of the blood vessels. We hypothesise that the blood levels EG degradation markers will be associated with disease severity, degree of inflammation, as well as volume and speed of intravenous fluids administered during early resuscitation.

Gomez, D. - Enteroinsular axis in healthy horses and horses with gastrointestinal diseases during hospitalization

Endotoxemia are conditions where bacteria and their products gain access to the blood and set up widespread infections, often leading to death. Consequences of sepsis and endotoxemia include organ failure, loss of hormonal control, and metabolic/electrolyte derangements, including high glucose (hyperglycemia). These abnormalities are linked to severity of illness and death. Recent research has shown that hormones from the intestine (known as incretins) are important to control glucose levels and the ability of the pancreas to produce insulin. However, there is no information on the incretins in horses with gastrointestinal disease. The goal of this study is to investigate incretins (GLP-1, GLP-2, GIP) and insulin in healthy horses and horses with colic and diarrhea and determine their association with clinical findings, severity of disease, and likelihood of mortality. This information will have clinical implications in the diagnosis, treatment, and prognosis of critically ill horses.

Koch, T. - Mesenchymal stromal cells for the treatment of equine tendonitis

Tendon and ligament injuries are common in the equine athlete. These types of soft tissue injuries result in significant economic loss to the equine industry each year as a result of decreased performance prolonged rehabilitation, and recurrent injury. Even though tendons do heal with rest, the fibroelastic scar tissue formed is functionally deficient in comparison to more flexible tissue of normal tendons. The result is compromised performance of the horse and high re-injury rates. Currently, tendon injuries are treated in numerous ways including simple lay-off and rest, controlled rehabilitation exercise programs, shock-wave therapy, and biologics such platelet rich plasma and so-called stem cell therapies to name the most common therapies. This range of treatments reflects that no treatment has proven superior, and that adequate tendon repair remains an unmet clinical need. Culture expanded mesenchymal stromal cells (MSC) have shown promise in reducing the re-injury rate in horses suffering from tendonitis. Improved MSC efficacy may be achieved by extending the dwell time of the cells within the tendon tissue. This has the prospect of healing more horses and extending the careers of more horses suffering from tendon injuries. Improved MSC efficacy may be achieved by extending the dwell-time of the cells within the tendon tissue. Hyaluronic acid (HA) is used to extend dwell-time of cells within synovial joints. This increased dwell-time is expected to be associated with increased inflammatory modulation within the tissue and improved tissue healing.

Koch, T. - Enhancement of Immune-Modulatory Properties of eCB-MSCs

Horses are multi-use livestock that contribute more than \$19 billion annually to the Canadian economy. Joint inflammation due to osteoarthritis or injury is among the most common causes of lost training days or premature retirement in equine athletes. Stem cells hold the promise of novel therapeutic approaches to these difficult-to-treat problems. Mesenchymal stromal cells (MSCs) can be expanded in culture to achieve the desired number for treatment and are capable of modulating cells of the immune system even after long-term storage, which makes them desirable for treatment of immune and inflammatory disorders. We expect that equine cord blood-derived (CB-) MSCs can be enhanced to have improved anti-inflammatory and immunomodulatory properties for future use as treatment of a variety of inflammatory or immune related disorders in horses. Our sole objective of this study is to determine possible in vitro enhancement of equine

CB-MSCs using a novel proprietary culture engineering method to improve these immunomodulatory properties. The work will generate pivotal data to support the clinical evaluation of enhanced allogenic equine CBMSCs to treat joint inflammation in research horses. Upon proving the concept in research horses with induced inflammation, the enhanced equine CB-MSC would be tested in a randomized clinical trial for the treatment of joint inflammation in client-owned horses suffering from osteoarthritis. Fully implemented, this therapy would provide a safe, efficacious, and technically simple treatment for selected inflammatory or immune-related disorders in horses.

Koch, T. – Assessment of safety of encapsulated MSC and pooled MSC in fetlock joints

Mesenchymal Stromal Cells (MSC) has been shown to alleviate pain in mild to moderate osteoarthritis (OA) of the fetlock joint. To date, these cells have been from single donor animals which makes the therapeutic response less standardized. Furthermore, the injected cells are often removed from the joint quickly, which likely limits their efficacy. We hypothesize that injection of pooled MSCs from multiple donors within a hydrogel formulation into normal fetlock joints is safe and comparable to injection of non-encapsulated single donor MSCs. Our objectives are: 1) To compare and contrast the safety of single donor MSCs and pooled MSCs in normal fetlock joints; 2) To compare and contrast the safety of encapsulated MSCs and non-encapsulated MSCs in normal fetlock joints. These feasibility studies will be conducted in research horses, and the horses will be returned to the research herd upon completion of the study. Through our industry partner, we have access to a novel way to inject MSCs into joints and trap them there by first mixing them with a gelatin that hardens into microspheres small enough to go through a needle. The product is analogous to a slow-release capsule for medication but developed for cells. We expect that the tested cell formulation will not trigger significant adverse reactions following multiple injections. These results will set the stage for testing in horses with lameness due to fetlock OA.

Koch, T. – Assessment of safety and potential of antisense miRNA-181 to treat fetlock OA

Osteoarthritis (OA) of the fetlock joint is a major equine welfare problem across breeds and disciplines leading to loss of training days, pre-mature retirement, or reduced performance. No therapies exist that delay progression of fetlock OA. MicroRNAs are small molecules that control gene expression; increased microRNA levels reduce expression of selected proteins. MicroRNA number 181 has been shown to be overexpressed in human facet joint OA. Injection of microRNA 181 into lab animal joints resulted in joint disease suggesting a critical role of microRNA 181 in joint health. Moreover, injection of antisense miR-181, which binds to and inactivates the effect of microRNA 181 in mice and rat models of joint disease, prevented the expected joint damage. This suggests that antisense miR-181 may be a useful therapy to treat OA. We hypothesize that injection of antisense miR-181 into equine fetlock joints is safe and associated with reduced joint inflammation and pain. Our objectives are: 1) To determine the safety of antisense miR-181 in normal equine fetlock joints 2) To determine the safety, anti-inflammatory properties and analgesic effects of antisense-miR-181 in fetlock joints with documented OA and pain. 3) To determine if antisense miR-181 injected into the fetlock joint is detectable in the bloodstream. We expect that multiple injections of antisense miR-181 will not be associated with significant adverse reactions in normal or OA fetlock joints. We expect that multiple injections of antisense miR-181 will lead to a reduction of miR-181 concentrations within the fetlock joint, reduced lameness, and reduced joint inflammation.

Koenig, J. - Mesenchymal stromal cells for the treatment of equine osteoarthritis

Mesenchymal Stromal Cells (MSC) has been shown to alleviate pain in mild to moderate osteoarthritis (OA) of the fetlock joint. To date, these cells have been from single donor animals which makes the therapeutic response less standardized. We hypothesize that equine umbilical

cord blood (eCB) MSC are safe and effective in treating joint pain and inflammation in an injury-induced equine model compared to placebo treatment. Our objectives are: 1) To compare the clinical safety and efficacy of eCB-MSC with that of saline in an equine fetlock-chip model; 2) To compare joint response to treatment on a molecular level to gain insights into possible mode of action of the eCB-MSCs. These feasibility studies will be conducted in research horses, and the horses will be returned to the research herd upon completion of the study. We expect that the tested cell formulation will not trigger significant adverse reactions following multiple injections. These results will set the stage for testing in horses with lameness due to fetlock OA.

Koenig, J. - Effect of extracorporeal shockwave therapy on umbilical cord blood mesenchymal stromal cells

Shockwave has been used as a treatment to decrease the healing time and improve the quality of the repair in bone and soft tissue injuries, but the exact mechanism is not completely understood. Intra-lesional (into bowed tendons) administration of stem cells in combination with shockwave has been used as an alternative treatment for orthopedic diseases like tendon and ligament lesions in horses, without scientific evidence, but anecdotally has resulted in faster healing times and return to function. There is a need to evaluate the effect that shockwave has on stem cells. One in vitro study showed that equine fat derived stem cells grow more rapidly and differentiate faster into different tissues, but nothing is known about the secretory function of these cells or the effect of shockwave on bone marrow or umbilical cord blood derived stem cells. Labelling these cells allows tracking of these cells also in vivo. Therefore, we hypothesized that shockwave will enhance the progenitor (their ability to differentiate into different tissue) and nonprogenitor (their anti-inflammatory and secretory) functions of stem cells. Our objectives are to firstly evaluate if shockwave increases umbilical cord blood derived stem cell growth rate, proliferation rate and differentiation in comparison to untreated cells in vitro. And secondly, to evaluate the effect of shockwave on topically injected allogeneic (derived from unrelated foals) umbilical cord blood derived stem cell and follow the cells in a neck wound model in vivo.

Koenig, J. – Cone beam CT technique development to image the standing horse cervical spine.

Using computed tomography (CT) to diagnose diseases of vertebra and associated structures of the neck in people and other species is common. In horses we rely largely on radiographs to diagnose diseases of the neck. In a recently published study, we showed that diagnosing osteoarthritis in neck joints on radiographs is not reliable and not repeatable. Misdiagnosis of compressive lesions with survey radiography alone occurs in 61% of cases compared with necropsy. CT evaluation of the neck in horses enables more accurate identification of bone and soft tissue lesions than traditional laterolateral radiography. Currently, to perform CT general anesthesia is required and complete cervical vertebral column examination has been limited by horse size and CT scanner gantry size. Development of a standing CT technique will avoid the expense and risk of general anesthesia and the cone beam CT is better able to image the caudal cervical spine. Development of this technique may also allow for CT myelography of the standing horse as the soft tissue differentiation with cone beam CT is limited, but excellent for bone.

We hypothesize that cone beam CT will allow evaluation of the cervical spine in standing horses that is comparable to that of a standard helical CT scanner for bones, and the procedure can be safely performed with reproducible results and will identify bony abnormalities in clinical horses that are not fully characterized or seen with radiographs.

Valverde, A. - Comparison of two intraoperative lidocaine constant rate infusions on cardiorespiratory function and quality of recovery in healthy isoflurane-anesthetized horses undergoing elective surgery

Delivery of general anesthesia using a combination of at least 1 injectable anesthetic drug during maintenance with inhalational anesthetics is nowadays very common in equine anesthesia and known as balanced anesthesia or partial intravenous anesthesia. Reduced doses of individual anesthetic drugs are possible with balanced anesthesia techniques because of synergistic or additive effects between the different drugs and often result in better analgesia and relaxation, less cardiorespiratory depression, and in horses may contribute to a better quality of recovery. Anesthetic mortality in horses is the highest among domestic species and recent studies show that most of the fatal outcomes occur in the postoperative period, including the recovery phase from anesthesia; therefore, the impact of intraoperative anesthetic drugs on the quality of recovery should be thoroughly considered. Lidocaine, routinely used intraoperatively in balanced techniques, has a sparing effect on the required concentration of inhalational anesthetic through analgesic and central nervous depression effects, which promotes a more stable cardiorespiratory function and a lighter plane of anesthesia. A negative association of lidocaine with the quality of recovery can outweigh these benefits by causing ataxia and visual dysfunction, especially if the infusion of lidocaine is not stopped for at least 30 minutes before the end of surgery, since plasma and tissue concentrations can be high at the time the horse attempts to recover and interfere with motor function and coordination. This study will investigate the feasibility of a higher rate of lidocaine and its effects during anesthesia and the recovery period.

zur Linden, A. - Equine Pulmonary Biopsy: Improving Safety and Efficacy

Percutaneous lung biopsy is a common method for obtaining diagnostic samples of lung tissue abnormalities in humans and other species. Due to blood vessels and airways that run throughout the lung tissue, complications can arise due to puncture of high flow structures during biopsy. Currently there has been no characterization of the detailed branching of either airways or blood vessels within the equine lung. Because anatomy differs between individuals, and anomalies of anatomy may occur, a preventative strategy will further increase safety of the procedure. Filling the biopsy tract with a material to reduce bleeding and air leakage, shows promising results but is not yet standard practice. By using data collected from dissection and multi detector computed tomography (MDCT) of cadaver horse lungs, we plan to elucidate the paths of major vessels and airways within the equine lung. Correlation of regions of minimal functional importance with external anatomical landmarks on adult equine cadavers will allow us to make recommendations on the safest locations for biopsy. These recommendations will be provided as landmarks easily identified by clinicians to improve the safety of the procedure in adult horses, which due to size, must be performed without imaging guidance. Development of a preventative step following biopsy will begin with testing gel foam embolization techniques for air and blood leakage in ventilated and perfused cadaver lungs. We hypothesize that greater anatomical knowledge, recommendations for biopsy locations, and preventative strategies will increase the safety and efficacy of blind percutaneous lung biopsy in horses.

Appendix 6: Research Publications:

Dr. Luis Arroyo

LG Arroyo, Rebecca Di Pietro, Mathilde Leclere, Marcio Costa. Effects of concentrated fecal microbiota transplant on the equine fecal microbiota after antibiotic-induced dysbiosis. The Canadian Journal of Veterinary Research. 2023;87, pp 85-96.

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Dr. Thomas Koch

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Dr. Judith Koenig

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J Koenig, Amy Westlund, S Nykamp, D Kenney, L Melville, N Cribb, D Oberbichler Case-control comparison of cervical spine radiographs from horses with a clinical diagnosis of cervical facet disease, with normal horses. *Journal of Equine Veterinary Science* accepted for publication June 2020

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Dr. Katrina Merkies

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Merkies K, Alebrand J, Harwood B, LaBarge K, Scott L. 2020. Investigation into thoracic asymmetry in ridden horses. *Comparative Exercise Physiology*, 16(1):55-62.

Dr. J Scott Weese

LG Arroyo Julia Assis Arantes, Alexandre Secorun Borges, Luiza Stachewski Zakia, Michael Gordon Surette, **JS Weese**, Marcio Carvalho Costa. Effect of dietary iron supplementation on the equine fecal microbiome. *The Canadian Journal of Veterinary Research*. 2023;87, pp 97-104

Appendix 7: Research Presentations

Dr. Janet Beeler-Marfisi

Copelin C*, Kang H*, Beeler-Marfisi J. Characterization of equine lymphocytes by flow cytometry. CORE recorded poster presentation. August 2021

Heng Kang*, Gary Lee*, Dorothee Bienzle, Janet Beeler-Marfisi. Equine alveolar macrophages and blood monocyte-derived macrophages respond differently to barn dust-analogue challenge. ACVP/ASVCP Annual Meeting October 30-November 2, 2021 (Proceedings abstract & highlighted virtual poster presentation with online Q&A session)

Abbinash Sanmugam, Heng Kang, Janet Beeler-Marfisi. Alveolar macrophage expression of CD163 in healthy and mildly asthmatic horses. Summer CORE Program poster presentation. August 2020

Kang H, Bienzle D, Lee G, Piché E, Viel L, Beeler-Marfisi J. Flow cytometric analysis of equine bronchoalveolar lavage fluid cells in horses with and without severe equine asthma. Graduate Student Research Symposium August 25, 2020

Kang H, Bienzle D, Lee G, Piché E, Viel L, Beeler-Marfisi J. Flow cytometric analysis of equine bronchoalveolar lavage fluid cells in horses with and without severe equine asthma. ACVP/ASVCP Annual Meeting October 30-November 1, 2020 (Proceedings abstract & platform presentation)

Lee KCG, Beeler-Marfisi J, Viel L, Piché É, Kang H, Sears W, Bienzle D. Bronchial brush cytology, endobronchial biopsy, and immunohistochemical measurement of salsa as diagnostic tools for severe equine asthma. ACVP/ASVCP Annual Meeting October 30-November 1, 2020 (Proceedings abstract & platform presentation) - first author won the Young Investigator Award for this presentation

Fatima K, Kang H, Hammermüller J, Beeler-Marfisi J. Development of an in vitro model of equine lung tissue for the study of pathogenesis of mild equine asthma. December 4, 2020. BIOM4521 Course Presentation.

Sarjeant R, Kang H, Hammermüller J, Beeler-Marfisi J. Effects of fungal spores versus yeast-derived 1,3-beta glucan on monocyte-derived macrophages. ANSC4700. Poster Presentation, December 4, 2020

ACVP/ASVCP Annual Meeting 2020: Abstract being submitted on flow cytometric analysis of equine BALF cells, supported in part by EG 2017-01

January-February 2020: primary literature-supported content, visuals, and lecturer in Equine Guelph's "Respiratory Health – Exclusive to Racing" course

Dr. Dorothee Bienzle

Lee GKC, Beeler-Marfisi J, Viel L, Piché E, Kang H, Sears W, Bienzle D. Bronchial brush cytology, endobronchial biopsy, and immunohistochemical measurement of SALSA as diagnostic tools for severe equine asthma. Ann Meet Am Coll Vet Pathol, Virtual, Oct. 2020

Dr. Nicola C. Cribb

Massimo Delli-Rocili, DVSc candidate, presented the following research in a poster competition and won first place! Delli-Rocili M, Cribb NC, Trout DR, Thomason J, Valverde A. Effectiveness of a paravertebral block versus local portal blocks for laparoscopic closure of the nephrosplenic space: A pilot study. Veterinary Surgery 2020:1-8. Early View. Presented at 2019 ACVS symposium.

Dr. Tracey Chenier

The seroprevalence of Neospora caninum in Ontario broodmares: accepted for Oral presentation at the 28th Conference of the World Association for the Advancement of Veterinary Parasitology, May 2021 (Online Conference this year). Authors: Olivia Johns, David Pearl, Robert Foster, John Barta and Tracey Chenier.

Dr. Diego Gomez

Jaramillo C, Arias MP, Renaud D, Gomez DE. Comparison of blood gas analysis, electrolytes and plasma protein concentrations in horses at different altitudes. American College of Veterinary Internal Medicine (ACVIM) Forum, online format, 2020.

Gomez DE, Buczinski S, Darby S, Palmisano M, Mackay R. Comparison of different methods for measurement of electrolytes and detection of acid-base disorders in horses. American College of Veterinary Internal Medicine (ACVIM) Forum, online format, 2020.

Gomez DE, Buczinski S, Palmisano M, Darby S, Mackay R. Methodologic comparison of two analyzers for measurement of glucose and creatinine concentrations in sick horses. American College of Veterinary Internal Medicine (ACVIM) Forum, online format, 2020

Dr. Amy Greer

Rossi, T.M., T.L. O'Sullivan, and A.L. Greer. Descriptive network analysis of Ontario equine competitions: implications for disease control. Equestrian Canada Health and Welfare Committee, March 10, 2021

Greer, A.L., Preparing Equine Facilities for Shelter in Place Orders. Equestrian Canada. March 2020

Dr. Thomas Koch

(Sep. 2022). Equine Cord Blood MSCs - 15 Year Experience and Perspectives. 8th Midwest Conference on Cell Therapy and Regenerative Medicine. Only Veterinarian invited to speak at human medical conference.

Dr. Judith Koenig

Alejandro Merchán, Judith Koenig*, Sahar Mehrpoyan, Amir Hamed Haji Alizadeh, Gabrielle Monteith, Nathalie Côté, Thomas Koch (2021).

Lymphocyte populations CD4+ and CD8+ response to repeated intralesional injection of superficial digital flexor tendon core lesions with Allogeneic Equine Cord Blood-Derived Mesenchymal Stromal Cells

ACVS Surgery Summit Meeting October 6-9, 2021 Chicago, Illinois

Dr. Katrina Merkies

Merkies K. A match made in heaven: the road to horse and human well-being. International Society for Equitation Science virtual summer meeting. August 2020

Hodder A, Merkies K. Can Ponies (*Equus caballus*) Distinguish Human Facial Expressions? Animal Behaviour Science Virtual Conference. July 2020

https://www.animalbehaviorsociety.org/virtual/?page=presentation&session_id=51&presentation_id=665

Merkies K. Euthanasia – a difficult decision. OVC Vet Club. Jan 9, 2020

Dr. Jeff Thomason

Asymmetrical limb loading in Thoroughbred racehorses as a possible cause for injury, D. Halucha, W. Sears, J. Thomason. 15th Annual (ISES) Conference, University of Guelph, August 19 - 21, 2020

Appendix 8: Presentations and Talks Given by Equine Guelph

Presentations & Talks by Gayle Ecker

June 23, 2022 An Introduction to Equine Guelph, Ontario Equine Education and Employment Program, online presentation

September 8, 2022 “Who is Equine Guelph?” Donor presentation online

September 9, 2022 An update on the Equine Guelph programs, Instructor Engagement meeting

November 30, 2022 The Horse Health Check, equine students, OAC

February 21, 2023 The Horse Health Check, Canadian Therapeutic Riding Association Instructors

March 30, 2023 Presentation on the Programs of Equine Guelph to Ontario Racing, Rexdale, Ontario

March 31, 2023 The Horse Health Check, Can-Am All Breeds Expo, Ancaster, Ontario

April 1, 2023 Journey through the Horse’s Gut, Can-Am All Breeds Expo, Ancaster, Ontario

April 2, 2023 Journey through the Horse’s Gut, Can-Am All Breeds Expo, Ancaster, Ontario

Presentations & Talks by Susan Raymond

V. MacPherson and **S. Raymond**, virtual presentation – “*Large Animal Rescue and Livestock Emergency Response Training – The value of multidiscipline responder training.*” Humane Canada’s Summit for Animals (previously known as the National Animal Welfare Conference), May 4, 2022

S. Raymond, “*Large Animal Rescue - Introduction*”, EG LAER Operational Level Course, October 1 & 2, 2022, Fairgrounds, Coteau-du-lac, Quebec

S. Raymond, “*Farm Safety Workshop*”, Undergraduate degree BBRM (EQN1010), October 6 & October 7, 2022, University of Guelph, Guelph, ON

S. Raymond, virtual presentation - “*Large Animal Rescue - Introduction*”, EG LAER Awareness Course for Diploma in Equine Care and Management Program, Ridgetown Campus, October 3, 2022, University of Guelph, Guelph, ON

S. Raymond, “*Fire Prevention & Emergency Preparedness Workshop*”, Undergraduate degree BBRM (EQN 3070), February 27, 2023, University of Guelph, Guelph, ON

S. Raymond, *“Fire Prevention and Emergency Preparedness”*, Undergraduate degree BBRM (EQN 2150), April 6, 2023, University of Guelph, Guelph, ON

S. Raymond, *“Large Animal Rescue - Introduction”*, EG LAER Awareness Course, April 15, 2023, University of Guelph, Guelph, ON

Appendix 9: Educational Offerings by Equine Guelph

Educational Courses offered by Equine Guelph and Open Learning and Educational Support

Advanced Equine Health through Nutrition (Instructor: Dr. Kathleen Crandell PhD)
Advanced Equine Behaviour (Instructor: Dr. Robin Foster PhD)
Equine Behaviour (Instructor: Zoë Thorbergson MSc & Cathy Wentworth-Stanley MSc)
Equine Business Finance and Risk Management (Instructor: Dr. Julie Fischer MBA, D.M.)
Equine Business Management (Instructors: Rachael Hunter MBA & Christine Polhkamp)
Equine Event Management (Instructor: Emily Esterson MFA PhD)
Equine Genetics (Instructor: Dr. Dianne Winkelman-Sim PhD)
Equine Nutrition (Instructor: Nicole Weidner PhD)
Equine Welfare (Instructor: Gayle Ecker MSc)
Exercise Physiology (Instructor: Dr. Amanda Waller PhD)
Equine Functional Anatomy (Instructors: Dr. Jeff Thomason PhD & Dr. Ev Post DVM)
Global Perspectives in Equid Welfare (Instructor: Dr. Tamara Tadich, PhD DVM)
Management of the Broodmare, Stallion and Foal (Instructor: Catherine Williams)
Equine Health & Disease Prevention (Instructor: Dr. Ev Post DVM)
Management of the Equine Environment (Instructors: Dr. Susan Raymond PhD & Kathy Fremes)
Marketing & Communications in the Equine Industry (Instructor: Tracy Dopko)
Stewardship of the Equine Environment (Instructor: Dr. Susan Raymond PhD)
The Equine Industry (Instructor: Gayle Ecker MSc)
Equine Journalism: (Emily Esterson MFA, PhD)

Short Online courses (15) offered by Equine Guelph on TheHorsePortal.ca

Equine Business 101 (On-Demand)
Equine First Aid (Instructor: Dr. Laura Frost, DVM)
Fire and Emergency Preparedness (Instructor: Dr. Susan Raymond, PhD)
Gut Health and Colic/Ulcer Prevention (Instructor: Nicole Weidner, PhD)
Horse Behaviour and Safety (Instructor: Dr. Susan Raymond, PhD)
Horse Behaviour and Safety for Youth (On-Demand)
Horse Care and Welfare (Instructor: Gayle Ecker, MSc)
Introduction to Forage (Instructor: Dr. Paul Sharpe, PhD)
Racehorse Lameness & Injury Prevention and Care (Instructor: Dr. Melissa McKee, DVM)
Racehorse Respiratory Health (Instructors: Drs. Sarah Shaw and Amy Lack, DVM)
Racehorse Gut Health & Ulcer/Colic Prevention (Instructor: Nicole Weidner, PhD)
Sickness Prevention (Instructor: Dr. Susan Raymond, PhD)
Sport Horse Lameness & Injury Prevention and Care (Instructor: Dr. Bri Henderson, DVM)
The Senior Horse (Instructor: Dr. Bettina Bobsien)
Horse Trailer Safety (Part One) (Instructor: Dr. Rebecca Husted)

Appendix 10: Summary of the Equine Studies program

Diploma in Equine Studies

The diploma in equine studies requires 6 core and 4 elective courses. We are seeing an increase in students beginning the program with the intent to complete the Diploma in Equine Studies. In 2009 we awarded our first Diploma in Equine Studies. With 39 diplomas awarded in 2022/23, the total number of diplomas awarded has increased to 408.

Program Requirements:

Management of the Equine Environment	Core
Health & Disease Prevention	Core
Equine Nutrition	Core
Functional Anatomy	Core
Equine Behaviour	Core
Stewardship of the Equine Environment	Core

Students can continue with electives from the Equine Science specialty

Growth & Development	Elective
Exercise Physiology	Elective
Equine Genetics	Elective

and/or combine Equine Business Management courses

Equine Business Management	Elective
Marketing & Communications in the Equine Industry	Elective
Finance & Risk Management	Elective
The Equine Industry	Elective
Equine Journalism	Elective
Equine Event Management	Elective

and/or combine Equine Welfare course

Equine Welfare	Elective
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Equine Science Certificate

The Equine Science Certificate requires 4 core and 2 elective courses. The first Equine Science Certificates were awarded in 2004/05 to 36 students. With 13 Equine Science Certificates awarded in 2022/23, to date 493 Equine Science Certificates have been awarded.

Program Requirements:

Management of the Equine Environment	Core
Health & Disease Prevention	Core
Equine Nutrition	Core
Functional Anatomy	Core
Growth & Development	Elective
Equine Behaviour	Elective
Exercise Physiology	Elective
Equine Genetics	Elective

Certificate in Equine Business Management

The Certificate in Equine Business Management requires 5 core and 1 elective course. With 4 Certificates in Equine Business Management awarded in 2022/23, to date 91 Equine Business Management Certificates have been awarded.

Program Requirements:

Management of the Equine Environment	Core
Equine Business Management	Core
Marketing & Communications in the Equine Industry	Core
Finance & Risk Management	Core
The Equine Industry	Core
Equine Journalism	Elective
Equine Event Management	Elective
Stewardship of the Equine Environment	Elective

Equine Welfare Certificate

The Equine Welfare Certificate requires 3 pre-requisite courses, 4 core and 2 elective courses. The Equine Welfare Certificate is a partnership between Equine Guelph, Campbell Centre for the Study of Animal Welfare and Open Learning and Educational Support. With 8 Certificates in Equine Welfare awarded in 2022/23, to date 40 Equine Welfare Certificates have been awarded.

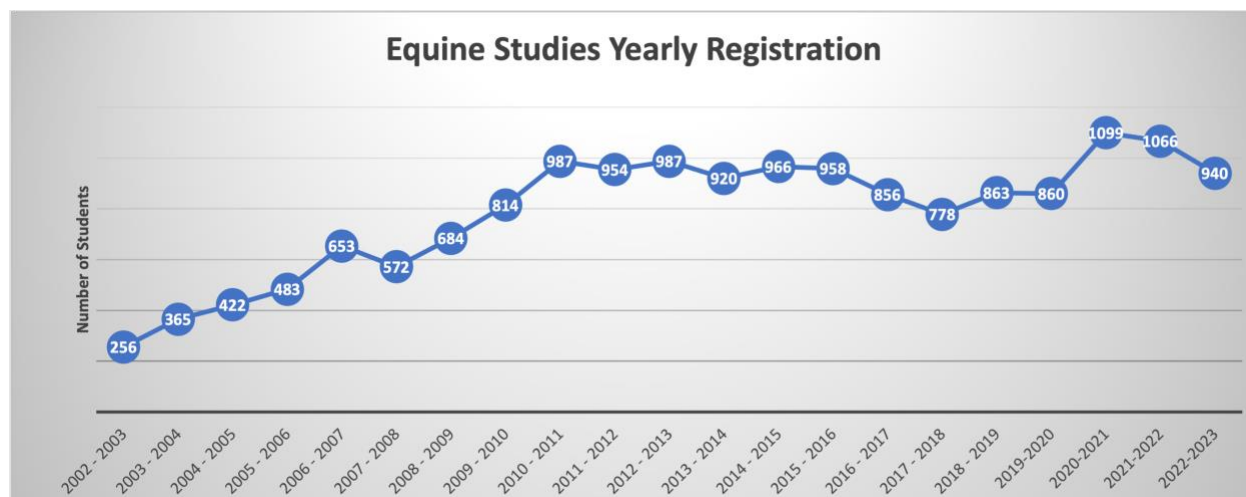
Program Requirements:

Management of the Equine Environment	Pre-requisite
Equine Behaviour	Pre-requisite
Course of your choice from Equine Science or Business	Pre-requisite
Equine Welfare	Core
Advanced Equine Behaviour	Core
Advanced Equine Health through Nutrition OR Equine Nutrition	Core
Global Perspectives in Animal and Equid Welfare	Core
Health & Disease Prevention	Elective
The Equine Industry	Elective
Equine Nutrition OR Advanced Equine Health Through Nutrition	Elective

2022 – 2023 Student Registration Profile

New students	270
Number of individual students	644
Total number of registrations	940

Equine Yearly Student Registration Summary



Yearly Student Registration All Programs and Courses

Year	# of reg	Projections	# of Students
2002 - 2003	256	180	
2003 - 2004	365	360	
2004 - 2005	422	480	
2005 - 2006	483	540	
2006 - 2007	653	760	
2007 - 2008	572	600	
2008 - 2009	684	710	
2009 - 2010	814	888	
2010 - 2011	987	1009	503
2011 - 2012	954	949	524
2012 - 2013	987	1125	487
2013 - 2014	920	1110	503
2014 - 2015	966	995	516
2015 - 2016	958	975	530
2016 - 2017	856	975	540
2017 - 2018	778	900	545
2018 - 2019	863	920	562
2019 - 2020	860	920	516
2020-2021	1099	1000	607
2021-2022	1066	1000	707
2022 - 2023	940	1000	597

New Student by Semester	
S22	76
F22	112
W23	82

Enrollment Registrations by Course 2022-2023

Summer 2022

2200000	Management of the Equine Environment	39
2200001	Equine Exercise Physiology	34
2200002	Equine Behaviour	28
2200005	Equine Functional Anatomy	64
2200006	Equine Nutrition	47
2200012	Equine Business Finance and Risk Management	25
2200013	Equine Welfare	22

Fall 2022

2200000	Management of the Equine Environment	61
2200002	Equine Behaviour	55
2200004	Equine Health and Disease Prevention	61
2200009	Equine Event Management	22
2200010	Stewardship of the Equine Environment	56
2200010	Advanced Equine Health through Nutrition	16
2200018	Management of the Broodmare, Stallion and Foal	29
2210002	Equine Business Management	39

Winter 2023

2200000	Management of the Equine Environment	43
2200004	Equine Health and Disease Prevention	42
2200005	Equine Functional Anatomy	64
2200006	Equine Nutrition	65
2200008	Equine Genetics	32
2200007	Equine Journalism	19
2200011	The Equine Industry	35
2200015	Advanced Equine Behaviour	21
2240000	Marketing & Communications in Equine Industry	21
Total Enrollments		940

Advanced Courses

Course	Semester	# of reg
Advanced Equine Behaviour	W23	11
Advanced Equine Health through Nutrition	F22	21
	Total	32

Equine Welfare Certificate Courses

The Equine Welfare Certificate is a partnership between Equine Guelph, Campbell Centre for the Study of Animal Welfare and Open Learning and Educational Support.

Course	Semester	# of reg
Global Perspectives in Equid Welfare	N/A	0
Equine Welfare	S22	22
	Total	22

Course Distribution

Number of courses offered each year

Year	Courses
2002 - 2003	4
2003 - 2004	6
2004 - 2005	8
2005 - 2006	9
2006 - 2007	13
2007 - 2008	10
2008 - 2009	12
2009 - 2010	16
2010 - 2011	19
2011 - 2012	21
2012 - 2013	24
2013 - 2014	21
2014 - 2015	22
2015 - 2016	22
2016 - 2017	23
2017 - 2018	21
2018 - 2019	26
2019 - 2020	22
2020 - 2021	22
2021 - 2022	23
2022 - 2023	24

Different individual courses available

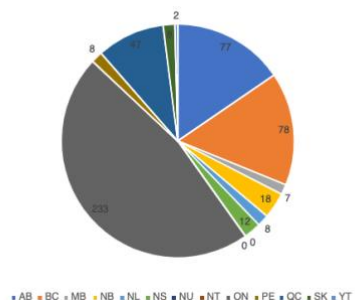
Year	Courses
2002 - 2003	3
2003 - 2004	4
2004 - 2005	6
2005 - 2006	7
2006 - 2007	8
2007 - 2008	7
2008 - 2009	11
2009 - 2010	14
2010 - 2011	15
2011 - 2012	17
2012 - 2013	19
2013 - 2014	16
2014 - 2015	17
2015 - 2016	17
2016 - 2017	18
2017 - 2018	16
2018 - 2019	17
2019 - 2020	14
2020 - 2021	17
2021 - 2022	17
2022 - 2023	17

Where are our students coming from?

Canadian Students

Student numbers	
AB	77
BC	78
MB	7
NB	18
NL	8
NS	12
NU	0
NT	0
ON	233
PE	8
QC	47
SK	8
YT	2
TOTAL	498

Canadian Student Distribution by Province



International Students

Student numbers	
Australia	4
Austria	1
Columbia	2
Denmark	1
Finland	1
France	1
Germany	1
Italy	1
Kazakhstan	1
Kenya	1
Lebanon	1
Mexico	2
New Zealand	2
Peru	1
Portugal	1
Russia	1
Saudi Arabia	2
Singapore	1
South Africa	4
Spain	1
UAE	2
UK	5
TOTAL	37

US Students

Student Numbers	
AZ	2
CA	5
CO	5
DC	1
FL	3
GA	1
IA	1
ID	2
IN	1
KS	2
MA	1
MD	2
ME	1
MI	1
MO	2
MT	1
NC	1
ND	2
NH	1
NJ	3
NY	2
OH	1
SC	2
SD	1
TX	4
UT	1
VA	6
VT	1
WA	2
WI	3
WY	1
TOTAL	62

Year to Year Comparison by student geographic location

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
CAN	459	442	461	451	424	428	428	387	469	573	498
US	31	54	38	44	56	40	40	94	88	93	62
INT	13	20	23	45	45	80	94	50	50	40	37
	503	516	522	540	525	548	562	572	607	706	597

Year by Year Comparison of the geographic location of Canadian Students

	11/12	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	22/23
AB	49	54	48	49	48	61	50	58	46	79	86	77
BC	48	64	63	66	70	60	67	70	49	68	90	78
MB	13	10	4	7	14	10	11	13	7	9	15	7
NB	8	7	5	4	6	9	8	10	10	10	16	18
NF	2	3	4	4	7	4	6	4	3	3	5	8
NS	10	15	18	16	13	7	11	11	13	17	15	12
NU	1	0	0	0	0	0	0	0	0	0	0	0
NT	0	0	3	3	1	0	2	2	2	2	1	0
ON	296	275	259	275	249	229	223	208	221	231	272	233
PI	0	4	3	1	2	0	2	2	3	7	7	8
PQ	18	12	21	20	22	29	30	32	29	37	60	47
SK	6	14	14	16	17	15	13	18	4	6	5	8
YT	0	1	0	0	2	0	2	0	0	0	1	2
	451	459	442	461	451	424	425	428	387	469	73	498

Graduates of our Certificates and Diploma Program of Studies

	ESC	CEBM	DipES	WEL
2004/05	36	n/a	n/a	n/a
2005/06	27	n/a	n/a	n/a
2006/07	32	n/a	n/a	n/a
2007/08	25	n/a	n/a	n/a
2008/09	38	n/a	n/a	n/a
2009/10	20	n/a	22	n/a
2010/11	30	2	13	n/a
2011/12	30	6	23	n/a
2012/13	28	7	29	n/a
2013/14	19	9	25	n/a
2014/15	21	6	20	n/a
2015/16	50	14	38	3
2016/17	27	6	34	3
2017/18	15	8	29	4
2018/19	20	10	27	8
2019/20	31	13	49	7
2020/21	18	4	37	3
2021/2022	13	2	23	4
2022/2023	13	4	39	8
	493	91	408	40

ESC – Equine Science Certificate

CEBM – Certificate in Equine Business Management

DipES – Equine Studies Diploma

WEL – Certificate in Equine Welfare

The Horse Portal 2022 – 2023

Course Offering Overview 2022-2023

Course	Enrollment Total	Enrollment PTSO	# Paid Students	% Paid Enrollment	Revenue
The Senior Horse – F22	71	35	69	97%	\$6099
Horse Care & Welfare – F22*	36	14	36	100%	\$4,234.50
Sickness Prevention in Horses F22*	26	0	9	35%	\$1,006.50
Equine First Aid - F22*	59	23	54	92%	\$5,411.50
Fire and Emerg Preparedness - F22*	30	12	7	23%	\$729.50
Behaviour and Safety F22	39	8	34	87%	\$3,417.63
Equine Business 101 - On Demand**	56	5	56	100%	\$2,240.00
Behaviour and Safety - Youth - On Demand**	316	5	29	9%	\$750.00
Racehorse Lameness/Injury - W23**	118	2	16	14%	\$1,505.75
Gut Health and Colic Prevention - W23	62	26	56	90%	\$4,842.39
Racehorse Gut Health and Colic - W23**	101	2	1	1%	\$80.75
Horse Trailer Safety Pt 1	36	19	30	83%	\$2,622.00
Racehorse Respiratory Health - W23**	93	1	2	2%	\$175.75
Sickness Prevention in Horses W23**	87	6	9	10%	\$793.25
Sport Horse Lameness/Injury S23	33	0	33	100%	\$2,755.00
Total	1163	158	441	62%	\$36,663.52

*Course offered as part of a "buy-one-get-one-half-off" package deal or BOGO deal

**Course registrations available for free with use of coupon, through partnership with sponsor

Course Enrollment Stats

Year	Total Enrollment	Federation Enrollment	% Federation Enrollment
2016-2017	58	35	60%
2017-2018	434	207	48%
2018-2019	681	333	49%
2019-2020	1153	155	13%
2020-2021	1626	182	11%
2021-2022	2817	289	10%
2022-2023	1163	158	14%

Provincial Breakdown

PTSO	Registered Students – 2022-23
Alberta (AEF)	14
British Columbia (HCBC)	27
Manitoba (MCH)	7
New Brunswick (NBEA)	9
Newfoundland (NLEA)	2
Nova Scotia (ENS)	15
Ontario (OE)	70
Prince Edward Island (IHC)	7
Saskatchewan (SHF)	4
Yukon (EAY)	3
Totals	158
% of Registrations:	14%

What our students are saying

The courses and the knowledge will pay back your tuition in spades because you will have healthier horses. You will see your veterinarian for fewer emergency situations because of better management going on in your barn. Your horses will be happier, and they'll have a longer and more stress-free life when you take Equine Guelph courses.

Gillian Allan



What I loved about all the courses at Equine Guelph, is our instructors challenged us to find good sources - to find the information that was valid. You are learning from industry experts. You are getting valuable resources. They are always updating the resources in the courses.

Monica Laane-Fralick

100% do it! The information gained from any of Equine Guelph's classes, you can use in any aspect of your equine journey.

Sargent Stacey Jennings

The fact you can do it on your own without sitting in a classroom – you can still take care of your barn but also take a step back and learn. I love it so much!

Shawna Ward

The welfare of your horse is going to improve if you apply these courses.

Robin Vanheeswyk

I have been in other online classes and the instructors at Equine Guelph go out of their way to make sure you understand the material. They are responsive in the discussion forums. They love to see their students learn. I have been able to rise up in my personal knowledge as well as my career.

Mary Gibson

The courses are beautifully interconnected with each other. While they are stand-alone courses, they nuance very nicely and dovetail into each other.

Heather Sproul

Appendix 11: Equine Guelph's Promotional Events

Displays and Events for Equine Guelph programs

Events Calendar – 2022-23

Royal Winter Fair – booth for Equine Guelph and Ontario Equine Education and Employment Program, November 3 – 13, 2022

Can-Am All Breeds Expo – booth for Equine Guelph and Ontario Equine Education and Employment Program, March 31 – April 2, 2023

Virtual presentation – *“Large Animal Rescue and Livestock Emergency Response Training – The value of multidiscipline responder training.”* Humane Canada's Summit for Animals (previously known as the National Animal Welfare Conference), May 4, 2022

Tradeshows: Ontario Association of Fire Chief's tradeshow – partner booth with Farm & Food Care – Ontario, May 6 & 7, 2022

EG LAER Awareness level course for the Dufferin Emergency Search and Rescue Team, July 22, 2022

EG LAER Operational Level Course, Fairgrounds, Coteau-du-lac, Quebec, October 1-2, 2022.

EG LAER Awareness level course for 2nd year Diploma in Equine Care and Management program students, University of Guelph, October 27, 2022

EG LAER Awareness level course, University of Guelph, April 15, 2023

EG LAER Awareness level course for the Hamilton Mounted Police, Holly Oaks Farm, Lynden, ON, April 19, 2023

Appendix 12: Media Coverage Summary

Topic	Articles (May 1, 2022-April 30, 2023)
Research	97
Education	110
Special Projects	92
EquiMania!	8

Coverage of Special Events, Programs or Research Projects

Topic	Articles (May 1, 2022-April 30, 2023)
TheHorsePortal.ca courses	40
Portal Free Racing courses	26
Equine Asthma	24
Ontario Equine Education and Employment Program	19
Senior Horse Resources	17
Trailer Resources	14
Deciphering Whinnies Research	14
Equine Industry Symposium	13
Stem Cell Research	12
Colic Risk Rater	11
Ponies distinguishing expressions	9
Large Animal Emergency Rescue	8
Antibiotics and the Equine Gut	7

Total Features: 307

100% of the 33 media releases sent out by Equine Guelph this fiscal year were picked up for further distribution. Equine Guelph's releases are distributed to a media list of over 160 equine media outlets!

The discerning audience currently following and republishing Equine Guelph's releases include national and provincial equine associations and partners, veterinary practices, over 160 equestrian media outlets, racing associations, feed companies, insurance companies, newspaper companies, stable owners and industry professionals. The engagement of this audience results in further reach to the industry in Ontario and around the globe.

Equine Guelph continues to maintain a presence on many social media platforms including Facebook, Twitter, LinkedIn, Instagram and YouTube. Followers include: many equine media associations (locally and around the globe), Woodbine Entertainment Group, Canadian Horse Racing News, AGCO Racing, Ontario Racing, many raceways, racing fans, many Canadian and Ontario Fire Departments, horse trainers, therapeutic riding academies, breed organizations, saddle fitters, rescue and rehoming facilities, equine trade shows, EquiMed, the Royal Agricultural Winter Fair, American Farriers Journal, Tack shops, AAEP American Association of Equine Practitioners, OAVT Ontario Association of Veterinary Technicians, The College of Veterinarians of Ontario, Ontario Veterinary Medical Association and Canadian Vet Medical Association. Equine Guelph sent out 385 tweets garnering 44,689 impressions.

Equine Guelph shared 413 posts on Facebook resulting in a collective reach of 219,167. Posts with the most reach and among the highest engagement were associated with the Ontario Equine Education and Employment Program. A special post on International Day of Women and Girls in Science which showcased videos of OVC female equine researchers was another post with very high engagement. Sickness prevention and special health alerts received considerable engagement as well.

Of the traffic to visit the Equine Guelph and Horse Portal websites from social media channels, over 90% came from Facebook.

In early 2017, Equine Guelph launched The Horse Portal, partnering with 10 provincial equestrian federations and Equestrian Canada (Canada's national equine association). Articles and news pertaining to The Horse Portal continue to be very popular. The launch of the Racing Pilot program in 2019 – featuring the 3 courses on Lameness Prevention, Respiratory, and Gut Health/Colic - created in partnership with the Alcohol and Gaming Corporation of Ontario (AGCO) continues to receive exceptional distribution by racing media outlets. In 2023, the course offerings developed from this project were among the most redistributed press releases!

Many links to pages of Equine Guelph's website continue to be developed by a variety of industry groups including educational websites, provincial equine associations and veterinary pages, student graduates of our program and many of our sponsors. Equine Guelph's membership with American Horse Publications (AHP) results in a much wider audience as 2 media articles per month are distributed to a broad list of U.S. equine publications.

Media Coverage List

Date	Magazine or Website	Article Title
22-May	CosaOnline.com	Research on Equine Pregnancy
22-May	Saddle Up Magazine	April (was) Dubbed Vaccination Education Month by Equine Guelph
22-May	HorseJournals.com Hoofbeats Enews	Finding the Hoof Care Balance - Top Tips & Myth Busters
22-May	HorseJournals.com Hoofbeats Enews	Equine Infection Control with Dr. Scott Weese - Podcast
22-May	NWHorseSource.com	Encapsulating Stem Cells for Treating Equines with Osteoarthritis
22-May	HorseJournals.com Hoofbeats Enews	How to Get Ticked Off
22-May	AmericanHorsePubs.org	Equine Student Creates Positive 'Ripples'
22-May	TheRider.com	Research on Equine Pregnancy
22-May	TheRider.com	Hamilton Hosts Large Animal Emergency Rescue Training
22-May	HorseTalk.co.nz	Microbiome's role in foal gut health under spotlight
22-May	AmericanHorsePubs.org	What's in a Whinny?
22-Jun	EquiMed.com	What's in a Whinny?
22-Jun	AmericanHorsePubs.org	Research on Equine Pregnancy
22-Jun	GlobalHeros.com	Win-Win: Creating New Careers with Horses
22-Jun	Toronto Star	Win-Win: Creating New Careers with Horses
22-Jun	Globe and Mail	Win-Win: Creating New Careers with Horses
22-Jun	National Post	Win-Win: Creating New Careers with Horses
22-Jun	RoyalFair.org	Start a Career in the Equine Industry with the Ontario Equine Education and Employment Program
22-Jun	EverythingHorseUK.co.uk	What's in a Whinny?
22-Jun	EquiManagement.com	Pre-loading with Electrolytes (Waller/Lindinger)
22-Jun	CosaOnline.com	What's in a Whinny?
22-Jun	HorseSport.com	Nova Scotia is Investing in Their Roots (Mentions HorsePortal.ca course for training officials)
22-Jun	HorseTalk.co.nz	Say What? When Horses Talk, It Pays to Listen
22-Jun	HarnessLink.com	OEEEP creating new harness racing careers
22-Jun	HorseJournals.com Hoofbeats Enews	What's in a whinny?
22-Jun	HorseJournals.com Hoofbeats Enews	Vaccination Guidelines For Healthier Horses

22-Jun	QROOI newsletter	Last offering of Free Ontario Equine Education & Employment Program
22-Jun	StandardbredCanada.ca	What's in a Whinny?
22-Jun	StandardbredCanada.ca	Researchers To Study Development of the Foal's Gut
22-Jun	Horse-Canada.com	Foal Gut Research Aims to Save Lives
22-Jun	AmericanHorsePubs.org	Research into Development of the Foal's Gut Could Advance Treatment of Critical Cases of Diarrhea
22-Jun	CosaOnline.com	Last Offering of Free Ontario Equine Education & Employment Program
22-Jun	CosaOnline.com	Researchers To Study Development Of The Foal's Gut
22-Jul	Saddle Up Magazine	What's in a Whinny?
22-Jul	HorseJournals.com Hoofbeats Enews	When the Rider is Hot, the Horse is Hotter
22-Jul	HorseJournals.com Hoofbeats Enews	Equine Asthma and Pollution (Reposted from Jan 2021 article)
22-Jul	AmericanHorsePubs.org	Praise for Practical Online Learning on TheHorsePortal.ca
22-Jul	AmericanHorsePubs.org	PVC an Emerging Trend for Horse Barn Construction
22-Jul	ARIA Enews	Research on Equine Pregnancy
22-Jul	Farms.com	Graduate of Ontario Equine Education and Employment Program - Susan Walker
22-Jul	HorseTalk.co.nz	Humans show good ability to interpret arousal levels of horses from whinnies
22-Jul	HorseTalk.co.nz	Is PVC the way of the future for horse barns?
22-Jul	HarnessLink.com	PVC usage increasing in barn construction
22-Jul	TheHorse.com	My Horse Has Diarrhea and Won't Eat—Now What? - Arroyo quoted
22-Jul	HarnessRacingUpdate.com	Lack of Quality Help Continues to be a Problem Plaguing the Industry - OEEEE program mentions
22-Jul	Newslinks - UofG	What's in a whinny? According to an Equine Guelph study, a whinny speaks volumes
22-Jul	WellingtonAdvertiser.com	What's in a whinny? According to an Equine Guelph study, a whinny speaks volumes
22-Jul	HorseSport.com	Research Finds Humans Can Identify Emotions in Whinnies
22-Jul	WellingtonAdvertiser.com	Research into development of foal's gut could advance treatment of critical cases of diarrhea
22-Jul	TheRider.com	Research into development of foal's gut could advance treatment of critical cases of diarrhea
22-Jul	EquineInfoExchange.com	Research into development of foal's gut could advance treatment of critical cases of diarrhea

22-Jul	Farms.com	Unique Educational Opportunities for Small Farmers - EG courses mention
22-Jul	HorseSport.com	Employers and Grads Agree - OEEEP Works
22-Jul	HorseSport.com	Antibiotic Resistance in Horses - Weese mentioned
22-Jul	NWHorseSource.com	What's in a Whinny?
22-Aug	StandardbredCanada.ca	The Impact of Antibiotics on the Equine Gut
22-Aug	Horse-Canada.com	Do Horses Enjoy Being Therapy Animals?
22-Aug	EquineChronicle.com	Equine Guelph's Latest Online Course is Golden!
22-Aug	Newslinks - UofG	Humans can decipher a horse's mood in their whinny, new research finds
22-Aug	CosaOnline.com	The Impact of Antibiotics on the Equine Gut
22-Aug	CosaOnline.com	Fall Online Courses
22-Aug	CosaOnline.com	Senior Online Horse Course
22-Aug	HorseTalk.co.nz	Equine gut problems can last a month after antibiotic use, study finds
22-Aug	HorseJournals.com	The Impact of Antibiotics on the Equine Gut
22-Aug	AmericanHorsePubs.org	The Impact of Antibiotics on the Equine Gut
22-Aug	ARIA Enews	PVC an Emerging Trend for Horse Barn Construction
22-Aug	TheRider.com	PVC an Emerging Trend for Horse Barn Construction
22-Aug	TheRider.com	Praise for Practical Online Learning on TheHorsePortal.ca
22-Aug	TheRider.com	AD: EG course button for 12-week courses
22-Aug	HorseSport.com	In Pursuit of Equine Education (EG courses mention among all the colleges in North America)
22-Aug	HorseJournals.com	Track Surface and Injury in the Performance Horse (Thomason)
22-Aug	EquiMed.com	Get Savvy for Your Senior Horse
22-Aug	EquusMagazine.com	Expand your Knowledge of Elder Care
22-Aug	HorseTalk.co.nz	Online course to help horse owners get savvy with seniors
22-Aug	EquusMagazine.com	A new clue to postpartum colic risk
22-Aug	Farms.com	Senior Horse Challenge - PPID & Other Health Issues
22-Aug	AmericanHorsePubs.org	Equine Guelph's Latest Online Course is Golden! Get Savvy for your Senior Horse
22-Sep	HorseTalk.co.nz	Ponies show ability to distinguish between human facial expressions, study shows
22-Sep	QROOI newsletter	New Portal Course: The Senior Horse
22-Sep	EverythingHorseUK.co.uk	Equine Guelph Names September Senior Horse Education Month

22-Sep	AmericanHorsePubs.org	Equine Guelph Names September Senior Horse Education Month
22-Sep	HorseTalk.co.nz	Free course helps kids learn to “speak horse”
22-Sep	EquiMed.com	Horse Crazy Youth Learn to Speak Horse by Taking Free Online Course
22-Sep	AmericanHorsePubs.org	Horse Crazy Youth Learn to Speak Horse by Taking Free Online Course
22-Sep	CosaOnline.com	Attention Horse Crazy Teenagers
22-Sep	QROOI newsletter	Horse Care and Welfare online course
22-Sep	Montsetvallons.com	Formation d'intervenants en sauvetage de grands animaux
22-Sep	HorseJournals.com	Equine Nutrition Myth Busters
22-Sep	HorseJournals.com	Help to Extend Your Horse Hay Supply
22-Sep	HorseJournals.com	Test Your Horse Hay Knowledge
22-Sep	HorseJournals.com	Preparing Fences Before the Freezing Temperatures
22-Sep	CosaOnline.com	Last Call Horse Care and Welfare Short Course
22-Sep	CosaOnline.com	Last Call Senior Horse Course
22-Sep	CosaOnline.com	Research Investigating Stem Cell Therapy For Equine Asthma
22-Sep	HorseSport.com	Tips for Grooming Your Elderly Horse (Senior Horse Challenge Mention)
22-Sep	HBPA.on.ca	Equine Guelph September E-news
22-Sep	HBPA.on.ca	Stem Cells Under Investigation as a Possible Treatment for Equine Asthma
22-Sep	StandardbredCanada.ca	Research Investigating Stem Cell Therapy for Asthma
22-Sep	HarnessLink.com	Equine Guelph “leading the herd” in online studies (tuition awards)
22-Sep	HorseSport.com	Filling Staff Shortages at the Barn and Track with OEEEEP
22-Oct	EquusMagazine.com	A New Way to Spot Stress in Horses
22-Oct	TheRider.com	Horse Crazy Youth Learn to Speak Horse by Taking Free Online Course
22-Oct	QROOI newsletter	Horse Care and Welfare online course
22-Oct	TheRider.com	Equine Guelph Names September Senior Horse Education Month
22-Oct	HorseJournals.com Hoofbeats Enews	Triumph Over Thrush
22-Oct	HorseJournals.com	Fire Prevention Outreach Program - Research Radio Podcast
22-Oct	HorseSport.com	Stem Cells to Treat Equine Asthma?

22-Oct	HarnessLink.com	Stem Cells Investigated as Treatment for Heaves
22-Oct	HorseTalk.co.nz	Stem Cells Investigated as Next Generation Equine Asthma Treatment
22-Oct	HarnessLink.com	Equine Guelph offering free racing-exclusive courses
22-Oct	QROOI newsletter	Sickness Prevention Horse Portal Course
22-Oct	CosaOnline.com	Free Online Racing-Exclusive Training
22-Oct	CosaOnline.com	Free Online Racing-Exclusive Training is Back and so are the Ambassadors of Equine Guelph Programs
22-Oct	CosaOnline.com	Last Call for the Equine First Aid Online Short Course!
22-Oct	CosaOnline.com	Annual Equine Industry Symposium Returns
22-Oct	EquiManagement.com	Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma
22-Oct	PaulickReport.com	Spot a Stressed-out Horse by its Blinks
22-Oct	PaulickReport.com	Early Research Suggests Stem Cells A Promising Treatment for Equine Asthma
22-Oct	HarnessLink.com	Equine Guelph offering free racing-exclusive courses
22-Oct	EverythingHorseUK.co.uk	Free Online Racing-Exclusive Training
22-Oct	QROOI newsletter	Free Online Racing-Exclusive Training
22-Oct	HorseSport.com	Large Animal Emergency Rescue Workshop in Quebec
22-Oct	StandardbredCanada.ca	Large Animal Emergency Rescue Workshop in Quebec
22-Oct	AmericanHorsePubs.org	Equine Guelph's Large Animal Emergency Rescue Workshop Travels to Quebec
22-Oct	StandardbredCanada.ca	Equine Industry Symposium Returns
22-Oct	EverythingHorseUK.co.uk	Horses in Human Health Under the Spotlight (Equine Industry Symposium)
22-Oct	StandardbredCanada.ca	Free Online Racing-Exclusive Courses are Back
22-Oct	HorseJournals.com Hoofbeats Enews	The Wrap on Horse Blankets (Gayle Ecker quoted)
22-Oct	HorseJournals.com Hoofbeats Enews	Winter Watering Options for Your Horse Farm
22-Oct	HorseJournals.com Hoofbeats Enews	Winter Management for the Outdoor Horse
22-Oct	HorseJournals.com Hoofbeats Enews	Help to Extend Your Hay Supply
22-Oct	EquineScienceUpdate.blogspot.com	Could stem cells be used to treat equine asthma?
22-Oct	AmericanHorsePubs.org	Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma
22-Oct	EquineInfoExchange.com	Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma

22-Oct	HorseNation.com	Could stem cells be the key to treating heaves?
22-Oct	HorseNation.com	Preventing Colic During the Cooler Seasons
22-Oct	CosaOnline.com	Register for Free! Respiratory, lameness and gut health/ulcer issues
22-Oct	HorseSport.com	Horses in Human Health and Learning Symposium Theme
22-Oct	PaulickReport.com	Equine Fecal Transplant Research May Help Horses with GI Issues
22-Oct	Hoofprints Magazine	Online Officials Course Registration Open
22-Oct	Hoofprints Magazine	Healthy Horse Happy Horse
22-Oct	ToltTalk	Breeding resources: Mare & Foal tool, Responsible Breeding article & 12-week course promo
22-Oct	NWHorseSource.com	Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma
22-Nov	European Trainer Magazine	EIPH - Could there be links? (Physick-Sheard)
22-Nov	CosaOnline.com	Equine Guelph Offers Fire Prevention Resources
22-Nov	HorseSport.com	November is Fire Prevention Education Month
22-Nov	AmericanHorsePubs.org	Equine Guelph Declares November Fire Prevention Education Month
22-Nov	HorseJournals.com Hoofbeats Enews	The Senior Horse
22-Nov	HorseJournals.com Hoofbeats Enews	Caring for the Equine Elder
22-Nov	HorseJournals.com Hoofbeats Enews	Nutrition Plan for your Senior Horse
22-Nov	ARIA newsletter	Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma
22-Nov	QROOI newsletter	Last Call Plug for Equine First Aid Course
22-Nov	NWHorseSource.com	The Impact of Antibiotics on the Equine Gut
22-Nov	TVA	LAER tv interview with Susan Raymond on TVA Channel show Salut Bonjour Nov 5, 2022
22-Nov	PaulickReport.com	Can Ponies Distinguish Human Facial Expressions?
22-Nov	TheRider.com	Stem Cells Under Investigation as a Possible Future Treatment for Equine Asthma
22-Nov	TheRider.com	Annual Equine Industry Symposium Features Horses in Human Health and Learning
22-Nov	TheRider.com	Equine Guelph Declares November Fire Prevention Education Month
22-Nov	TheRider.com	Leading the Herd in Equine Studies Online (Tuition awards for racing)
22-Nov	TheRider.com	Equine Guelph's Large Animal Emergency Rescue Workshop Travels to Quebec

22-Nov	CosaOnline.com	Last Call for Fire & Emergency Preparedness Course
22-Nov	HorseJournals.com Hoofbeats Enews	Can Ponies Distinguish Human Facial Expressions?
22-Nov	HorseSport.com	Equine Guelph Offers Resources for Safe Trailering
22-Nov	CosaOnline.com	Attention Caretakers in Ontario Horse Racing! - Equine Guelph Tuition Awards
22-Nov	CosaOnline.com	LAST CALL! Horse Behaviour & Safety Online Short Course
22-Nov	StandardbredCanada.ca	Equine Guelph Offers Fire Prevention Resources
22-Nov	StandardbredCanada.ca	Equine Guelph Offers Safety Resources for Young Horse Lovers
22-Nov	EquiMed.com	EquiMania! Resources For Young Horse Lovers
22-Nov	HorseNation.com	What to do with a wet horse in the cold?
22-Nov	HorseSafetyTips.com	EquiMania! Resources For Young Horse Lovers
22-Nov	EquiMed.com	Equine Guelph Declares November Fire Prevention Education Month
22-Nov	EquiMed.com	Can Ponies Distinguish Human Facial Expressions?
22-Nov	StandardbredCanada.ca	Can Ponies Distinguish Human Facial Expressions?
22-Nov	QROOI newsletter	Last call for Tuition Awards and over \$1000 worth of online learning from Equine Guelph!
22-Nov	QROOI newsletter	Fire & Emergency Preparedness Course
22-Nov	CosaOnline.com	Equine Guelph Offers Safety Resources for Young Horse Lovers
22-Nov	HorseJournals.com Hoofbeats Enews	How to Wrap a Horse's Legs
22-Nov	HorseTalk.co.nz	A hydrated horse is a healthy horse, and the key is quality electrolytes
22-Nov	PaulickReport.com	Equine Guelph Offers Three Free Online Racing Short Courses In 2023
22-Dec	CosaOnline.com	Equine Guelph Offers Resources for Safe Trailering
22-Dec	CosaOnline.com	SC Partners With Equine Guelph for Free Courses
22-Dec	CosaOnline.com	Attention Grooms in Ontario!
22-Dec	CosaOnline.com	Free for AGCO Licensees!
22-Dec	HorseTalk.co.nz	Electrolyte pre-loading investigated in horses (Waller, Lindinger)
22-Dec	HorseTalk.co.nz	Free presentation explores sustainable parasite control in horses (Peregrine OAHN webinar)
22-Dec	TheRider.com	Can Ponies Distinguish Human Facial Expressions?
22-Dec	TheRider.com	Safe Travelling with Equine Guelph's New Resources
22-Dec	AmericanHorsePubs.org	Safe Travelling with Equine Guelph's New Resources
22-Dec	EquiMed.com	Safe Travelling with Equine Guelph's New Resources

22-Dec	StandardbredCanada.ca	Equine Guelph Offers Resources on Safe Travelling
22-Dec	StandardbredCanada.ca	SC Partners With Equine Guelph for Free Courses
22-Dec	StandardbredCanada.ca	Equine Guelph Offers Tuition Awards
22-Dec	HorseJournals.com Hoofbeats Enews	How to Cool Out a Hot Horse in Winter
22-Dec	EquineChronicle.com	Safe Travelling with Equine Guelph's New Resources
22-Dec	BVMsports.com	Safe Travelling with Equine Guelph's New Resources
22-Dec	Cayuse Communications	Can Ponies Distinguish Human Facial Expressions?
22-Dec	HorseJournals.com Hoofbeats Enews	Diagnosis and Treatment of Equine Joint Disease
22-Dec	HorseJournals.com Hoofbeats Enews	Footing the Riding Arena (Dr. Thomason's white paper mentioned)
22-Dec	EquiManagement.com	Can Ponies Distinguish Human Facial Expressions?
22-Dec	EquiMed.com	Can Ponies Distinguish Human Facial Expressions?
22-Dec	QROOI newsletter	Racehorse Lameness Prevention Kicks off Winter Online Learning Series 2023
22-Dec	ToltTalk	Fire & Emergency Preparedness & First Aid
23-Jan	CosaOnline.com	Winter Online Learning Series Kicks Off
23-Jan	CosaOnline.com	Learn for Free
23-Jan	HorseTalk.co.nz	Symposium explores equine impact on human health
23-Jan	QROOI newsletter	Free Racing Exclusive Courses (Last Call For Free Online Lameness Course)
23-Jan	CosaOnline.com	Last Call for Free Online Lameness Course
23-Jan	StandardbredCanada.ca	Winter Online Learning Series Kicks Off
23-Jan	StandardbredCanada.ca	Last Call for Free Online Lameness Course
23-Jan	StandardbredCanada.ca	Stem Cells Show Promise to Treat Osteoarthritis
23-Jan	StandardbredCanada.ca	Equine Industry Symposium Sessions Available Online
23-Jan	Horse-Canada.com	Equine Industry Symposium Sessions Available Online
23-Jan	AmericanHorsePubs.org	Equine Industry Symposium Enhances Understanding of the Role of Horses in Human Health and Learning
23-Jan	HarnessLink.com	Finalists announced for 2022 Media Awards (EG mentioned as a judge)
23-Jan	QROOI newsletter	Free Racing Exclusive Courses (Last Call for Free Online Lameness Course)
23-Jan	HBP.A.on.ca	Strong Support for Future Use of Stem Cells to Treat Equine Osteoarthritis - Equine Guelph Annual
23-Jan	HorseNation.com	Mud Management

23-Jan	AmericanHorsePubs.org	Strong Support for Future Use of Stem Cells to Treat Equine Osteoarthritis - Equine Guelph Annual
23-Jan	HorseJournals.com Hoofbeats Enews	Equine Colic - Signs, Symptoms, Treatment
23-Jan	HorseJournals.com Hoofbeats Enews	Caring for the Equine Elder
23-Jan	HorseTalk.co.nz	Stem cells could be the way of the future to treat equine osteoarthritis
23-Jan	EverythingHorseUK.co.uk	Equine Osteoarthritis receives strong support
23-Jan	CosaOnline.com	Strong Support for Future Use of Stem Cells to Treat Equine Osteoarthritis - Equine Guelph Annual
23-Jan	CosaOnline.com	Equine Industry Symposium Sessions Available Online
23-Feb	CosaOnline.com	Equine Guelph Winter Courses Continue
23-Feb	CosaOnline.com	Last call! Racehorse Gut Health & Ulcer/Colic Prevention
23-Feb	AmericanHorsePubs.org	Equine Guelph Talks Ulcers This February During Colic Prevention Education Month
23-Feb	Horse-Canada.com	Preventing Colic and Ulcers in Horses
23-Feb	HorseNation.com	What is your Horse's Colic Risk?
23-Feb	Cayuse Communications	Colic Risk Rater
23-Feb	HarnessLink.com	Ward Wins 2022 Racing Industry Scholarship
23-Feb	StandardbredCanada.ca	Ward Wins 2022 Racing Industry Scholarship
23-Feb	StandardbredCanada.ca	New Study to Begin on Equine Asthma and Macrophage Responses
23-Feb	EquiManagement.com	Equine Asthma and Macrophage Responses
23-Feb	EquiManagement.com	Horse Eye Blink Rates and Stress
23-Feb	AmericanHorsePubs.org	Equine Asthma and Macrophage Responses
23-Feb	EverythingHorseUK.co.uk	Equine Asthma and Macrophage Responses
23-Feb	HorseTalk.co.nz	Equine asthma research to delve into "the cells that call the shots"
23-Feb	HorseTalk.co.nz	Trailer course drives home safety for horse owners
23-Feb	HarnessLink.com	Equine Guelph has Online Horse Trailer Course
23-Feb	EquineChronicle.com	Equine Guelph Drives Home Safety with Online Trailer Course
23-Feb	EquineChronicle.com	Equine Guelph Talks Ulcers This February During Colic Prevention Education Month
23-Feb	EquineInfoExchange.com	Equine Guelph Talks Ulcers This February During Colic Prevention Education Month
23-Feb	HarnessLink.com	Equine Guelph announces Colic Prevention Education Month

23-Feb	WellingtonAdvertiser.com	Stem cell research proves effective for equine osteoarthritis
23-Feb	WellingtonAdvertiser.com	Equine Industry Symposium enhances understanding of the role of horses in human health...
23-Feb	HorseSafetyTips.com	Equine Guelph Drives Home Safety with Online Trailer Course
23-Feb	AmericanHorsePubs.org	Equine Guelph Drives Home Safety with Online Trailer Course
23-Feb	EquiMed.com	Equine Guelph Drives Home Safety with Online Trailer Course
23-Feb	HorseJournals.com Hoofbeats Enews	Equine Entrepreneur 101 (Interview with Julie Fischer, EG Business Finance & Risk Management)
23-Feb	TheRider.com	Equine Industry Symposium enhances understanding of the role of horses in human health...
23-Feb	TheRider.com	Easing the Pain - Stem Cell Therapy Shows Promise for Equine & Human Joint Injuries
23-Mar	AmericanHorsePubs.org	Vaccination Aiming Toward Optimal Immunity
23-Mar	StandardbredCanada.ca	Equine Guelph Offers Vaccination Resources
23-Mar	CosaOnline.com	Equine Guelph Offers Vaccination Resources
23-Mar	HorseJournals.com Hoofbeats Enews	Air Quality in the Horse Barn
23-Mar	HorseJournals.com Hoofbeats Enews	Equine Entrepreneur 101
23-Mar	HorseJournals.com Hoofbeats Enews	Osteoarthritis Stem Cell Study
23-Mar	HorseJournals.com Hoofbeats Enews	What does Biosecurity Mean?
23-Mar	HorseJournals.com Hoofbeats Enews	Equine Industry Symposium 2022
23-Mar	StandardbredCanada.ca	Equine Guelph Opens Course To Youth For Free
23-Mar	HarnessLink.com	Horse Portal offering free youth course
23-Mar	HorseTalk.co.nz	Short course in equine sickness prevention free for teens
23-Mar	CosaOnline.com	Last call! Racehorse Respiratory Health Online Course
23-Mar	HorseJournals.com Hoofbeats Enews	Finding the Hoof Care Balance - Top Tips & Myth Busters
23-Mar	QROOI newsletter	Last Free Racing Series Course - Respiratory
23-Mar	StandardbredCanada.ca	Three Free Online Courses
23-Mar	OVC.UoGuelph.ca	Research Studies Quarterback of the Horse's Immune System

23-Mar	OVC News Bulletin	Research Studies Quarterback of the Horse's Immune System
23-Mar	Horse-Canada.com	Free Youth Course on The Horse Portal
23-Mar	HorseJournals.com Hoofbeats Enews	Barn Management Tips to Defend Against Dust
23-Mar	Horse-Canada.com	How is your horse trivia? - Who Knew?
23-Mar	StandardbredCanada.ca	Equine Guelph Seeking Contributors for Trivia Book
23-Mar	HorsemanshipRadio.com	Healthy Barns Breathe (Podcast featuring Dr. Susan Raymond at 5 - 25-minute mark)
23-Mar	AmericanHorsePubs.org	Equine Guelph: An Online Portal to Unlimited Possibilities
23-Mar	CosaOnline.com	Equine Guelph Seeking Contributors for Trivia Book
23-Mar	CosaOnline.com	Equine Guelph Opens Course to Youth for Free (sickness prevention Portal course)
23-Mar	CosaOnline.com	Final Equine Guelph Winter Course on Respiratory Health
23-Mar	EquiMed.com	Equine Guelph: An Online Portal to Unlimited Possibilities
23-Mar	EquiMed.com	Sickness Prevention in Horses Course Coming Spring '23 Mar 20 – Mar 31
23-Mar	EquiMed.com	EquiMania for Kids - A Delightful Way for Youth to Learn Everything About Horses
23-Mar	HorseTalk.co.nz	Equine trivia sought for new book on little-known horse facts
23-Mar	EventingNation.com	Equine trivia sought for new book on little-known horse facts
23-Mar	Saddle Up Magazine	Stem Cell Therapy Shows Promise for Equine and Human Joint Injuries
23-Apr	Saddle Up Magazine	Vaccination Aiming for Optimal Immunity
23-Apr	ARIA enewsletter	Vaccination Aiming for Optimal Immunity
23-Apr	HorseSport.com	OEEEP Program is Back and Better Than Ever
23-Apr	QROOI newsletter	OEEEP Program is Back and Better Than Ever
23-Apr	HorseSport.com	OEEEP Returns: Training Employees for Horse Industry Careers
23-Apr	Horse-Canada.com	Managing Mud - Solutions for Swampy Paddocks
23-Apr	HorseJournals.com Hoofbeats Enews	Equine Colic - Signs, Symptoms, Treatment
23-Apr	HorseJournals.com Hoofbeats Enews	The Equine Heart
23-Apr	HorseJournals.com Hoofbeats Enews	Biosecurity on the Horse Farm
23-Apr	TheRider.com	Equine Asthma and Macrophage Responses

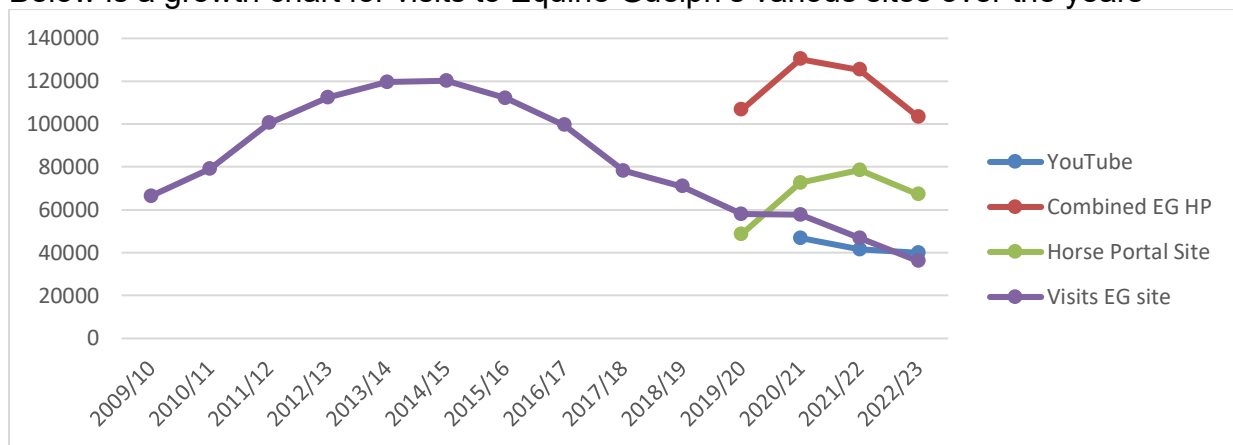
23-Apr	TheRider.com	Earn a diploma from a leading university (Equine Guelph course ad)
23-Apr	TheRider.com	The Perks of Volunteering (Janice Wright)
23-Apr	TheRider.com	Building Confidence: How Studying Equine Behaviour Helped this UofG grad. (Elizabeth Hoyle)
23-Apr	TheRider.com	Equine Guelph - An online portal to unlimited opportunities
23-Apr	TheRider.com	OEEEP Returns: Training Employees for Horse Industry Careers
23-Apr	QROOI newsletter	OEEEP Program is Back and Better Than Ever
23-Apr	StandardbredCanada.ca	Need Help, Looking for Work? OEEEP Returns
23-Apr	StandardbredCanada.ca	OEEEP Announces Employer Information Sessions
23-Apr	StandardbredCanada.ca	Can-Am Draws Record Crowd, Raises Funds for Equine Guelph
23-Apr	HorseJournals.com	Can-Am Draws Record Crowd, Raises Funds for Equine Guelph
23-Apr	CosaOnline.com	Can-Am Draws Record Crowd, Raises Funds for Equine Guelph
23-Apr	AmericanHorsePubs.org	Biosecurity Research Findings – More than Just Vaccination
23-Apr	AmericanHorsePubs.org	Annual Investment in Large Animal Emergency Rescue Training

Appendix 13: Web Site Report

May 1, 2022 – April 30, 2023

	Equine Guelph	TheHorsePortal.ca	Combined Total	YouTube
Visits/Sessions	35,988	67,188	103,176	39, 971
Page Views	52,935	487,219	540,154	35, 400
New Users	28,684	39,266	67,950	
Avg. Session Time	00:01:10	00:05:00		N/A

Below is a growth chart for visits to Equine Guelph's various sites over the years



TECHNOLOGY OVERVIEW

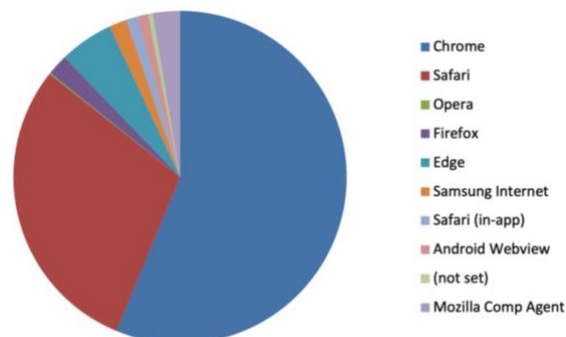
(Audience – Mobile – Overview)

	EquineGuelph.ca		TheHorsePortal.ca		YouTube.ca	
Device	Sessions	Percentage	Sessions	Percentage	Views	Percentage
Mobile	11,910	(64.95%)	26,482	(39.41%)	13,568	33.9%
Desktop	23,374	(64.95%)	38,615	(57.47%)	23,273	58.2%
Tablet	704	(1.96%)	2,091	(3.11%)	2,062	5.2%
TV					1,057	2.6%

TOP 10 BROWSERS – OPERATING SYSTEM (Audience – Technology – Browser)

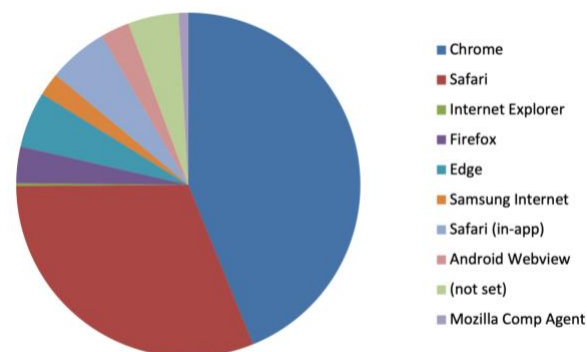
Equine Guelph.ca

Operating system	Sessions	Percentage
Chrome	20,201	(56.13%)
Safari	10,573	(29.38%)
Edge	1,888	(5.25%)
Mozilla Comp. Agent	951	(2.64%)
Firefox	721	(2.00%)
Samsung Internet	603	(1.68%)
Safari (in-app)	416	(1.16%)
Android Webview	364	(1.01%)
(not set)	158	(0.44%)
Opera	47	(0.13%)



TheHorsePortal.ca

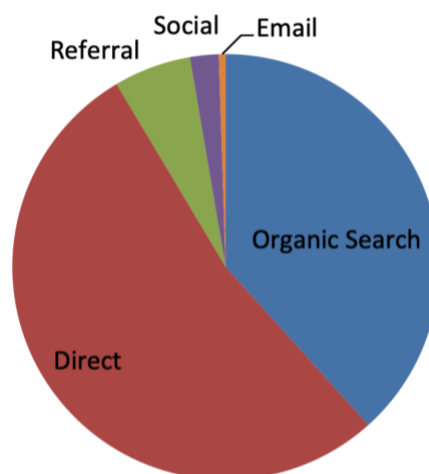
Browser	Users	Sessions
Chrome	17,525	(43.70%)
Safari	12,402	(30.93%)
Safari (in-app)	2,236	(5.58%)
Edge	2,109	(5.26%)
(not set)	1,903	(4.75%)
Firefox	1,367	(3.41%)
Android Webview	1,089	(2.72%)
Samsung Internet	864	(2.15%)
Mozilla Comp. Agent	359	(0.90%)
Internet Explorer	101	(0.25%)



ACQUISITION CHANNELS (*Acquisition – All Traffic – Channels*)

EquineGuelph.ca

	Channel	Sessions
1	Direct	19,114
2	Organic Search	13,798
3	Referral	2,109
4	Social	780
5	Email	186

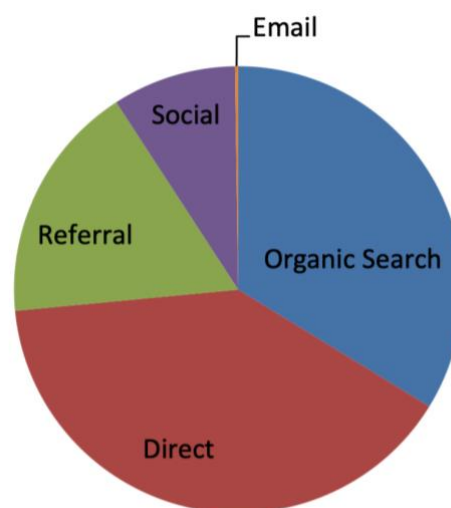


YouTube

	Channel	Views	Percentage
1	External	20,557	(51.4%)
	Shorts Feed	4,354	(10.9%)
2	YouTube Search	3,919	(9.8%)
3	Direct	3,158	(7.9%)
4	Playlists	2,802	(7.0%)
5	Suggested Videos	1,720	(4.3%)

TheHorsePortal.ca

	Channel	Sessions	Percentage
1	Direct	26,687	(39.72%)
2	Organic Search	22,687	(33.77%)
3	Referral	11,659	(17.35%)
4	Social	5,999	(8.93%)
5	Email	155	(0.23%)
6	(Other)	1	(0.00%)



TOP REFERRAL SOURCES (Acquisition – All Traffic – Source/Medium)

EquineGuelph.ca - Source	Sessions	Percent
Other	27,396	(47.54%)
1. direct	19,114	(53.11%)
2. google/organic	13,339	(37.07%)
3. m.facebook.com/referral	338	(0.94%)
4. bing / organic	333	(0.93%)
5. thehorseportal.ca/referral	678	(1.88%)
6. courselink.uoguelph.ca / referral	353	(0.98%)
7. facebook.com / referral	124	(0.34%)
8. lm.facebook.com / referral	127	(0.35%)
9. Press Release The Real Cost of Horse Ownership / email	133	(0.37%)
10. l.facebook.com / referral	104	(0.29%)

	TheHorsePortal.ca - Source / Medium	Sessions	Percent
1	(direct) / (none)	26,687	(39.72%)
2	google / organic	21,098	(31.40%)
3	m.facebook.com / referral	2,311	(3.44%)
4	facebook.com / referral	1,704	(2.54%)
5	equineguelph.ca / referral	3,326	(4.95%)
6	courses.opened.uoguelph.ca / referral	1,729	(2.57%)
7	lm.facebook.com / referral	783	(1.17%)
8	l.facebook.com / referral	808	(1.20%)
9	equinejobtrack.com/ referral	814	(1.21%)
10	standardbredcanada.ca / referral	753	(1.12%)

TRAFFIC SOURCES SOCIAL MEDIA. (Acquisition – Social – Network Referrals)

EquineGuelph.ca

Social Network	Sessions	Percentage
1. Facebook	693	(88.85%)
3. Twitter	39	(5.00%)
2. YouTube	21	(2.69%)
4. Pinterest	14	(1.79%)
7. LinkedIn	9	(1.15%)
6. Instagram	4	(0.51%)

TheHorsePortal.ca

	Social Network	Sessions	Percentage
1	Facebook	5,609	(93.51%)
2	Twitter	196	(3.27%)
3	Instagram	76	(1.27%)
4	YouTube	58	(0.97%)
5	LinkedIn	33	(0.55%)
6	Instagram Stories	19	(0.32%)
7	Weebly	4	(0.07%)
8	WordPress	2	(0.03%)
9	ResearchGate	1	(0.02%)

CONTENT

TOP LANDING PAGES. (Behaviour – Site Content – Landing Pages)

EquineJobTrack.ca	Views	Users
EquineJobTrack.ca	37,790	7,959
1. Start Job Search	14,215	5,299
2. Browse Jobs	7,118	2,460
3. Post a Job	1,043	210

	EquineGuelph.ca Pages	Sessions	Percentage
1.	/education/indiv_courses.php	3,541	(9.84%)
2.	/education/programs_list.php	2,053	(5.70%)
3.	/Tools/lame_checklist.php	1,500	(4.17%)
4.	/Tools/lameness_lab.php	954	(2.65%)
5.	/education/index.php	952	(2.65%)
6.	/about_us/contact.php	941	(2.61%)
7.	/Tools/HorseBlanketingTool.php	902	(2.51%)
8.	/wp-content/plugins/portal-tools/tools/colic_risk_rater/Colic_Risk_Rater.html?ts=2022072901	895	(2.49%)
9.	/education/store.php	885	(100.00%)
10.	/Tools/biosecurity.php	753	(2.09%)
TheHorsePortal.ca Pages		Sessions	Percentage
1	/home page	10,854	(16.15%)
2	/courses/	4,213	(6.27%)
3	/my-account/	2,092	(3.11%)
4	/log-in/	1,002	(1.49%)
5	/course/equine-business-101/	833	(1.24%)
6	/stop-think-act/	812	(1.21%)
7	/news/	810	(1.21%)
8	/course/ontario-equine-education-and-employment-program-cohort-4/	809	(1.20%)
9	/12-week-courses/	808	(1.20%)
10	/course/free-on-demand-horse-behaviour-and-safety-youth-course-ages-13-17/	721	(1.07%)
YouTube Top Videos		Views	Percentage
1	Rider Rescue LAER QC	4,545	(11.4%)
2	LAMENESS LAB - CASE 1 - ASSESSMENT	1,496	(3.7%)
3	Foaling How To's - Monitoring Foaling	983	(2.5%)
4	RESEARCH S.1 E.4 - Deciphering Horse Whinnies - Dr. Katrina Merkies - May 2022	941	(2.4%)
5	Safe Travelling - Trailer Pre-Trip Inspection	923	(2.3%)
6	THE BASICS OF INFECTION CONTROL - How To	907	(2.3%)
7	Equine Conditioning - Dr. Hilary Clayton	825	(2.1%)
8	What is Roaring? - Dr. Heather Chalmers - Roaring Research	665	(1.7%)
9	LAMENESS LAB - CASE 1 - RESULTS	628	(1.6%)
10	Foaling How-To's - Predicting Foaling (1 of 2 "Foaling How-To's" videos) - Dr. Tracey Chenier	566	(1.4%)

Appendix 14: Sponsors

Equine Guelph would like to thank the following sponsors for their contributions and support of Equine Guelph's program.



- Colic Risk Rater Tool
- Industry Education Partner
- Hoofprints Tribute Program
- Education Patron
- Risk Series Brochures
- Courses on TheHorsePortal.ca



- Course on TheHorsePortal.ca



- EquiMania! Youth Safety Initiative



- Industry Education Partner
- Course on TheHorsePortal.ca



- EquiMania! Youth Safety Initiative
- HEALTHflash



- Enewsletter
- Senior Horse Challenge Tool
- Course on TheHorsePortal.ca



- National Training Partner Safety Initiative



- HEALTHflash



- EquiMania! Youth Safety Initiative



- EquiMania! Youth Safety Initiative
- Fire Prevention



- EquiMania! Youth Safety Initiative



- EquiMania! Youth Safety Initiative



- Industry Education Partner
- EquiMania! Youth Safety Initiative



- Industry Education Partner
- Course on TheHorsePortal.ca



- Vaccination Equi-Planner Tool
- Course on TheHorsePortal.ca

EQUINE GUELPH - Funds Held in Alumni House Accounts

As at: 30 April 2023

Donation/Sponsorship Accounts	Acct #	Total	Notes
Education	802091	\$21,090	<i>2nd Installment of 3 Year Agreement</i>
Sponsorship	802811	\$170,600	
Area of Greatest Need	802089	\$62,784	
For The Herd	803694	\$1,355	
JobTrack, LAR (GRAS)	803914	\$50,125	
OE Welfare Fund	802764	\$3,760	
Total		\$309,714	
Research Donations			
	802092	\$7,726	<i>Available for 2022-23 competition.</i>
Scholarship Accounts			
Roger L'Heureux	803258	\$7,430	<i>To be allocated to tuition award winner - Winter 2023</i>
Stuart Stocks	803240	\$555	<i>To be allocated to tuition award winner - Winter 2023</i>

Quarter Report - Q4, Equine Guelph, 2022-2023 FY

Operating Accounts:

As at April 30, 2023

Revenue-Expense	Category	Type	YTD	Notes
REVENUE				
	GENERAL REVENUE	HORSE PORTAL, LAR, OEEEEP, GRANTS, ETC.	-\$211,494.42	
		OPEN-ED - 12 WK COURSE TUITION	-\$78,232.22	Error in W23 Tuition Transfer - 20k short
			-\$289,726.64	
TRANSFERS				
	TRANSFERS	FUND TRANSFER - HIP/QH/HBPA RES. SUPPORT	-\$38,000.00	
		SPONSORSHIP, GRAS, Edu Donations, C. Kerr	-\$90,000.00	
		UofG Budget Allocation	-\$43,253.66	
			-\$171,253.66	
EXPENSES				
	PERSONNEL	SALARIES/BENEFITS - EG STAFF	\$476,784.61	
	OPERATING	EDUCATIONAL SEMINAR (STAFF, HON'S)	\$26,151.00	LAR, EquiMania, Portal Instructor honorariums
		HORSE PORTAL REG - VISA/MC FEES	\$1,009.00	
		LEASE AND RENTAL PMTS - PRINTER	\$1,016.48	
		OFFICE SUPPLIES	\$1,435.41	
		SUPPLIES- DATA PROCESSING/COMPUTERS	\$13,864.67	Upgrades/Portal Maintenance/Healthcare Tool migration
		PRINTING AND PUBLICATION CHARGES	\$23,223.43	Ads, displays for OEEEEP promo
		UofG PHONE SERVICES, PARKING, MAILING	\$5,342.71	
		TRAVEL/RELOCATION/HOSPITALITY	\$10,965.68	EquiMania at Minnesota, LAR Quebec, G. Ecker East Coast meetings
		MISCELLANEOUS SUPPLIES	\$696.37	
		MISCELLANEOUS EXPENSES	\$2,525.45	Computers, software licenses, etc.
Sub-Total			\$86,230.20	
		TOTAL EQUINE GUELPH Q2	\$102,034.51	
		2021-2023 BUDGET CARRYFORWARD	\$290,576.34	
		TOTAL EQUINE GUELPH CARRYFORWARD	\$188,541.83	

Equine Guelph Financial Report - Research Program

As at: April 30, 2023

	EP TAYLOR		HIP/QH		HBPA		Donations/Other		
Account Number:	710655		045878		046071		022298		Totals:
FUND BALANCE, Previous Year End	\$93,841		\$102,354		\$10,257		\$2,159		\$208,611
REVENUE									
EP Taylor Endowment	\$100,030		-		-		-		\$100,030
HIP/QR Allocation	-		\$125,000		-		-		\$125,000
HBPA Allocation	-		-		\$65,000		-		\$65,000
Donations	-		-		-		\$0		\$0
TOTAL REVENUE	\$100,030		\$125,000		\$65,000		\$0		\$290,030
INTERNAL TRANSFERS									
HIP/QH Admin Support (20%)	-		-\$25,000		-		-		-\$25,000
HBPA Admin Support (20%)	-		-		-\$13,000		-		-\$13,000
Other			\$37,909	A	\$40,000	A			\$77,909
TOTAL TRANSFERS	\$0		\$12,909		\$27,000		\$0		\$39,909
PROGRAM EXPENDITURES									
Research Project Allocations	-\$18,146		-\$174,918		-\$74,359				-\$267,423
Peer Review Honorariums	-\$1,487								-\$1,487
Other Expenses (Travel, etc.)	-\$1,373	B							-\$1,373
	-\$21,006		-\$174,918		-\$74,359		\$0		-\$270,283
FUND BALANCE as at April 30, 2023	\$172,864		\$65,345		\$27,898		\$2,159	C	\$268,267

Notes:

A - Unspent funds returned from closed J. Thomason project; cancelled M. Hurtig project

B - Donation to CARD (D. Bonder)

C - \$250,583 owed to new projects awaiting first or second year funding; OMAFRA support funding (Merkies)