

# EQUINE EXTENSION PROGRAM DEVELOPMENT LARIMER COUNTY (STATEWIDE)

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Mentors:  
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## SUMMARY OF INTERNSHIP ACTIVITIES

I worked with Dr. Devan Catalano, CSU's Equine Extension Specialist, on a variety of program objectives and research projects.

### Adult Equine Education

- Assisted with hosting Monday night Equine Nutrition talks at the Equine Teaching and Research Center in July. I helped design and distribute promotional flyers as well as welcomed attendees.

### Youth Equine Education

- Led educational workshops with a focus on equine anatomy, nutrition, and hands-on activities including body condition scoring and treat-making for the participants of the Colorado State 4-H Conference and CSU Youth Horsemanship Camp.



### County Fairs

- At the Weld County and Larimer County Fairs, I helped the 4-H superintendents with tasks such as running the in-gate, grading tests, and uploading scores into the show management software.
- During fair, the Alexander Mountain Fire broke out, and I was introduced to fire emergency management. I helped quickly set up pens and fill waters for evacuated livestock.

### Research

- Conducted research on the project "Yield and Nutritive Value of Teff Grass Grown in Three Soil Amendments Under Dryland and Irrigated Conditions". We collaborated with a hay producer in Longmont with the goal of providing recommendations for growing teff grass, a warm season grass, in Colorado. I was involved in plot design, soil treatments, and monitoring growth.
- Collected data for a study looking at intake rate across three types of feeders, including timing the horses' eating duration, counting their eating bouts and measuring leftovers.



### Industry

- Visited Wagonhound Land & Livestock and Powderhorn Land & Livestock in Wyoming. I experienced their large-scale ranching and breeding I met industry leaders and attended the Diamond-McNabb Horse Sale.
- Assisted the veterinarians at vet checks at the Happy Jack Endurance Ride in Medicine Bow, Wyoming by examining horse's vital signs and recording health evaluation results.
- Shadowed Jesse Phillips, a Colorado livestock brand inspector. He taught me how to check brands and the laws of brand inspection.



## PROJECT INTRODUCTION

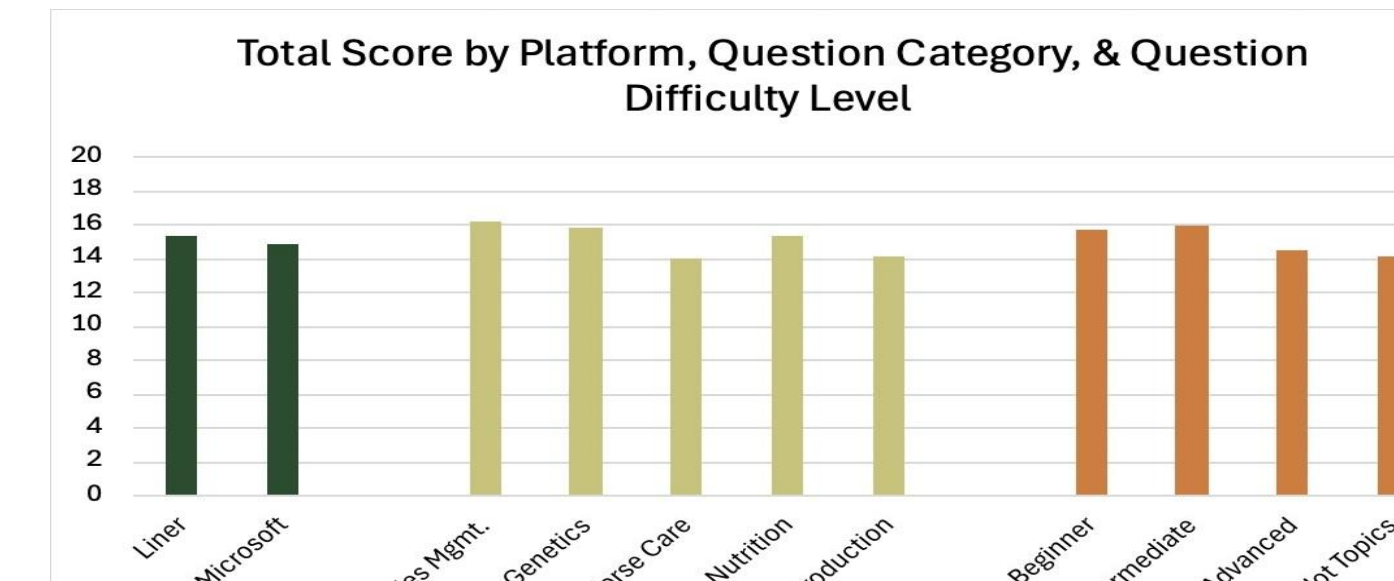
- Artificial Intelligence (AI) programs are becoming a popular tool for providing information and answering questions.
- Horse owners may be turning to AI programs for quick answers and guidance about their horse.
- Highlighting the need to evaluate the accuracy of AI-generated answers as it could lead to misinformation and potentially harmful suggestions.
- This project evaluated the accuracy and comprehensiveness of AI-generated answers for commonly asked questions within horse related topics to gauge the potential and limitations of AI as an informative tool for horse owners and students.

## MATERIALS AND METHODS

- Wrote 40 questions on horse-related topics: general horse care, equine facilities management, nutrition, genetics, and reproduction.
- Categorized questions into levels: beginner, intermediate, advanced, and "hot topics".
- Utilized two AI tools: Liner powered by ChatGPT-4 and Microsoft Copilot to generate responses.
- Evaluated questions using a rubric based on accuracy, relevance, thoroughness, and quality of sources. Accuracy was determined by cross-referencing response with scholarly sources and expert opinions.

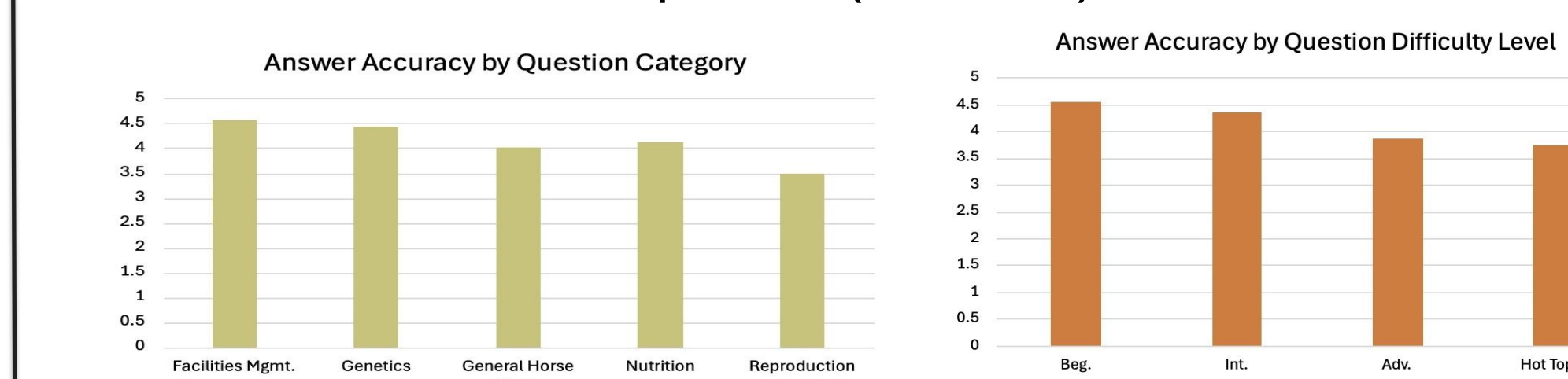
## RESULTS & DISCUSSION

Total score was not affected by platform ( $P = 0.380$ ), category ( $P = 0.104$ ) or level ( $P = 0.116$ )



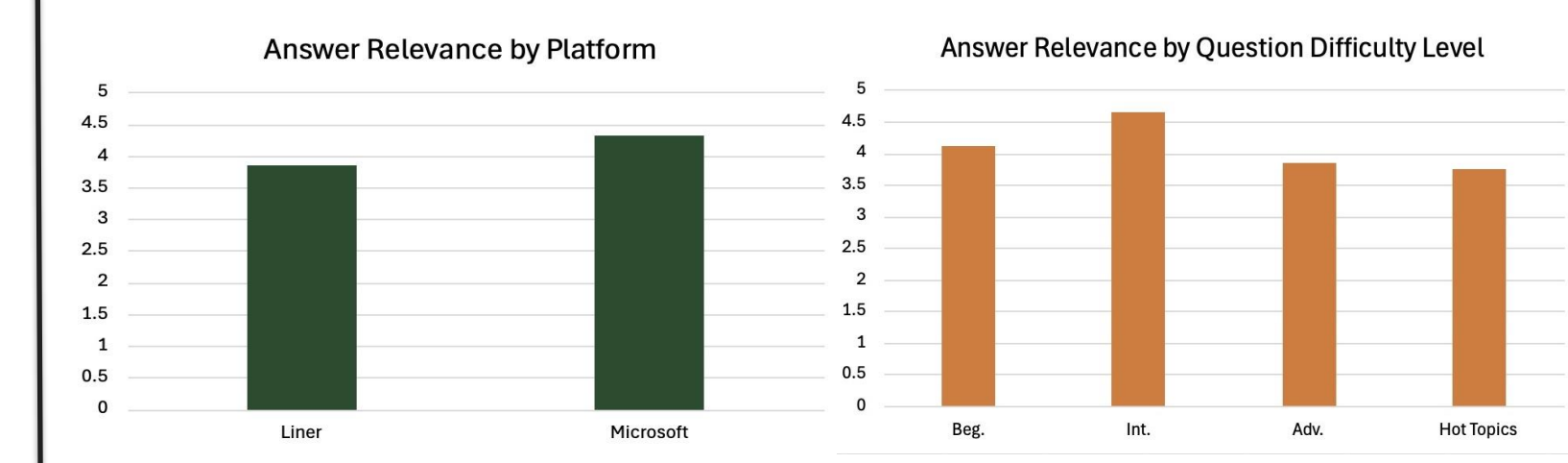
- This result was surprising, but it could be due to both AI tools providing generally consistent answers across different categories and difficulty levels.
- Furthermore, there was a balancing of strengths and weakness. Microsoft Copilot was more relevant, while Liner was more thorough.
- More differences may be detected by increasing sample size.

Accuracy was affected by category ( $P = 0.002$ ) and level ( $P = 0.003$ ) but not platform ( $P = 0.556$ )



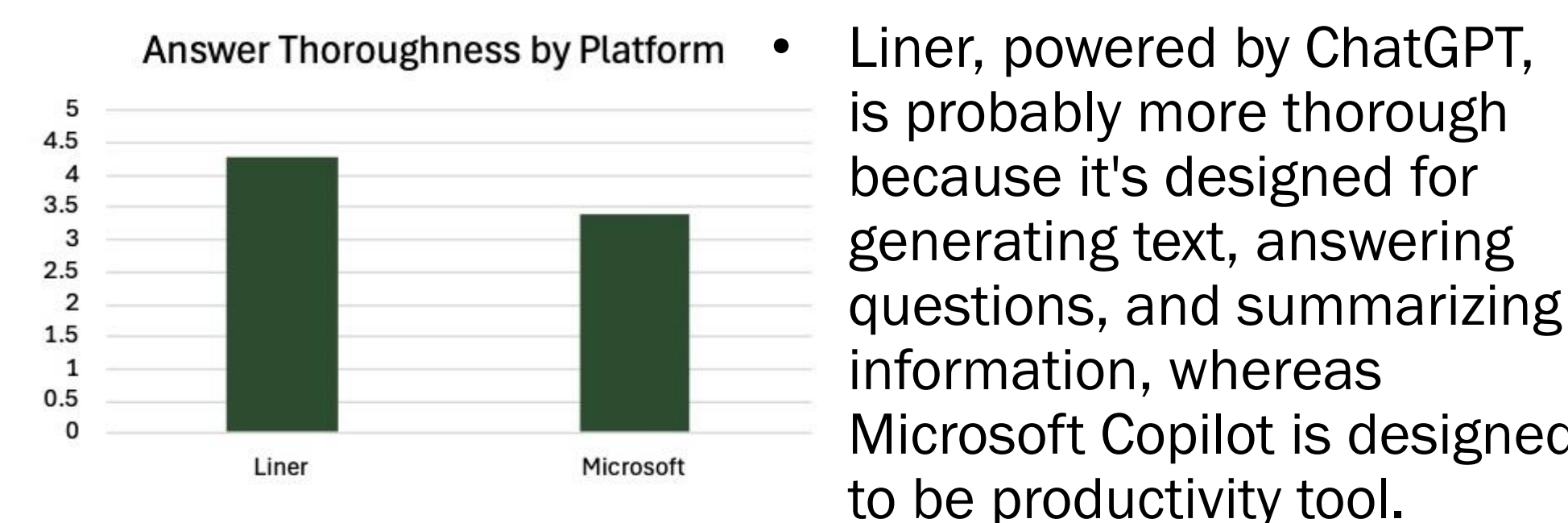
- Facilities Management had the highest accuracy, likely due to its circumstantial nature and consistent guidelines whereas reproduction had the lowest accuracy since it requires knowledge of biological processes and reproductive technologies.
- AI struggled with advanced and hot topic questions. Upon review, many lacked detail or contained minor errors found when cross checking the information from textbooks and experts.

Relevance was affected by platform ( $P = 0.009$ ), and level ( $P = 0.003$ ) but not category ( $P = 0.054$ )

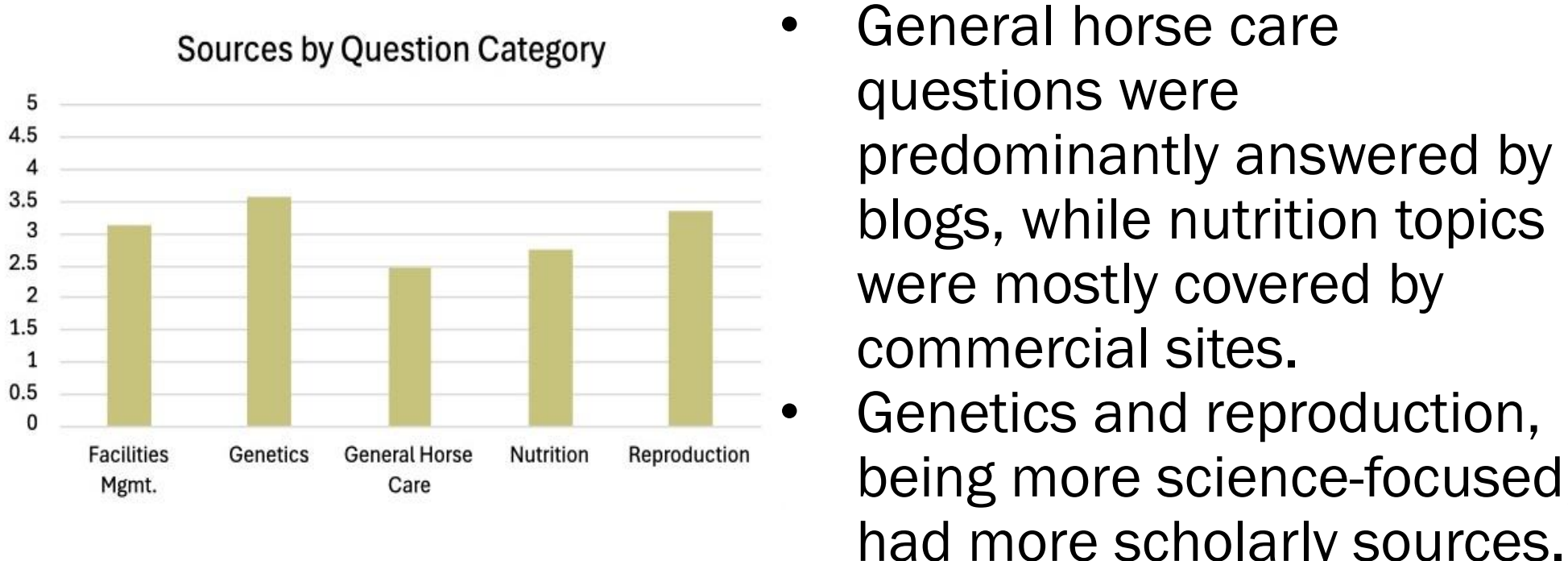


- Liner produced extremely lengthy responses with multiple paragraphs, some of which were irrelevant and deviated from the question itself, whereas Microsoft Copilot usually responded in brief bullet points.
- The reason for variation in relevance by level is unclear and warrants further investigation.

Thoroughness was affected by platform ( $P < 0.001$ ) but not category ( $P = 0.477$ ) or level ( $P = 0.116$ )



Completeness of sources was affected by category ( $P = 0.049$ ) but not platform ( $P = 1.000$ ) or level ( $P = 0.274$ )



## CONCLUSION

This research demonstrates that while AI tools may hold promise for the future as resources for horse owners, they currently fall short of expertise and knowledge that can be offered by CSU Equine Extension. The AI programs struggled with complex topics and were inconsistent, with one platform more relevant and the other more thorough.

## NEXT STEPS

- Expanding Equine Extension Programming:** Initiate and support upcoming equine extension programming such as creating extension infographics, crafting 4-H workshops, and enhancing our social media accounts through engaging posts.
- Gaining Hands-On Experience:** Continue shadowing equine professionals to learn about their career and areas of expertise (i.e., a farrier, feed stock representative, and an equine surgeon).
- Contributing to Legends of Ranching Program:** Utilize the skills that I have developed during my internship, event planning and public speaking, to support the Legends of Ranching Sale.
- Focusing on Equine Nutrition Research:** Investigate Glycemic Index of Beet Pulp and present my findings of both projects at the Equine Science Society Symposium in June 2025. These skills and experiences will set a good foundation as I pursue a master's degree in animal nutrition.



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<i>Criteria</i>	<i>Excellent (5)</i>	<i>Good (4)</i>	<i>Satisfactory (3)</i>	<i>Needs Improvement (2)</i>	<i>Poor (1)</i>
<b>Accuracy</b>	Answer is completely accurate, with detailed and correct information.	Answer is generally accurate but may lack some details.	Answer is mostly accurate with minor errors.	Answer contains errors or lacks significant details.	Answer is mostly inaccurate or misleading.
<b>Relevance</b>	Answer is highly relevant and directly addresses the question.	Answer is mostly relevant with minor deviations.	Answer is somewhat relevant but may include unnecessary information.	Answer has some relevance but includes significant irrelevant information.	Answer is mostly irrelevant or off-topic.
<b>Thoroughness</b>	Answer provides in-depth information with comprehensive coverage of the topic.	Answer provides good information and all main points sufficiently addressed.	Answer provides basic information and main points are discussed.	Answer provides minimal information and briefly touches on main points.	Answer lacks significant information and/or completely misses the question.
<b>Sources</b>	Answer is derived solely from scholarly sources such as university extension offices or scholarly articles.	Answer is based on material from equine organizations and associations or includes an extension source.	Answer is formulated from recognized equine industry magazines.	Answer is sourced from a mix of industry magazine and established commercial websites.	Answer comes from unreliable sources such as personal blogs and online forums.