

Experiential Learning Experience in Swine Health Management for Pre-veterinary Students

Final report

Participants

Students who were involved or wanting to be involved with our swine volunteer group were emailed with a course outline and application form. Sixteen students were offered the opportunity to take part, four of those decided to concentrate on their studies rather than participate. The final group consisted of 10 undergraduate students and two students who had finished their undergrad, all of whom were hoping to enter veterinary college. Their educational backgrounds were in Biological Sciences, Animal Science, Animal Biology and Bachelor of Science studies. The one student who had graduated was taking extra courses and the other was working to get more experience, the rest were in 2nd year (2), 3rd year (4) and 4th year (4) of their programs. Nine were women and 3 men.

In-class session

An in-class session was held to go over the program and make sure insurance forms were filled out. An initial evaluation was given to see what level the participants were at in terms of knowledge and experience with swine. We went over basic terms of swine management, did an observation exercise and a communication exercise to emphasize how to learn about pig behavior and how to listen to what the animals are communicating by their actions.

Farm visits

Breeding:

Our first visit was to the breeding area of the barn. They were able to watch the producer collect semen from two boars and process the semen. They also watched a natural breeding. Each participant had the chance to do an ultrasound pregnancy diagnosis on four sows. We discussed signs of heat, what things to look out for in the breeding barn and how to read a sow card.

Farrowing: We went to the farrowing rooms on a day when a large number of sows had just farrowed or were about to farrow. Each participant assisted with a dystocia by manually pulling out a pig. They also processed piglets (teeth, tails and iron), checked a stillborn pig to see if the lungs floated and took blood samples from 3 pigs. Most participants castrated two or more litters of piglets.

Nursery: We vaccinated one room of nursery pigs (~240 pigs). The students worked in pairs marking and injecting the pigs. We then did an observation exercise, looking in each pen for either environmental issues (e.g. water bowl contaminated with manure) or pigs that had problems (e.g. pigs that were small for their age or umbilical hernias).

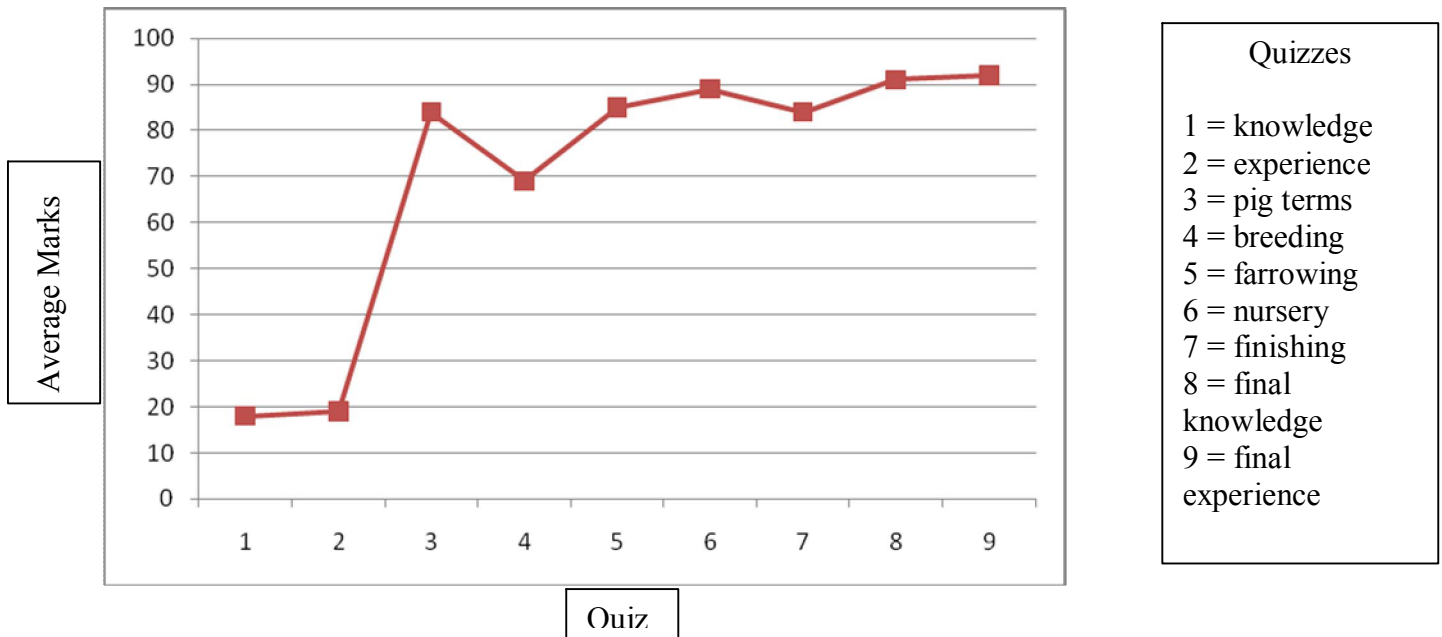
Finisher: We walked through the finisher barn and observed pig behavior and talked about environmental issues. Each pair of participants collected a saliva sample from a group of pigs. Each participant collected a fecal sample and/or fecal swab from a pig. We used a pig board to encourage pigs to walk onto the scale to get a sense of how much the pigs weigh and to participate in moving pigs. Some participants were able to snare a finisher.

Windshield classroom time

On the way to the farm, which was about 20 – 30 minutes away from the University, the students were given a 10-question quiz that covered the material from the previous session (i.e. on our first trip to the farm they were given a quiz on pig terms. We then reviewed the correct answers as a review of what we had learned the previous session. They were then given a 2 – 4 page handout that had further terms and information on the upcoming session i.e. the breeding herd. This was discussed before we got to the barn. (Information packets in [Appendix 1](#))

Quizzes

The participants were given an entry quiz to see how much information and experience they had in swine production. There were 11 questions which ranged from basic to more advanced knowledge (examples included: What is a gilt? How do you figure out a farrowing rate?) The student's marks for this part ranged from 0 – 4.5/11 with an average score of 2.2 or 20%. The second part was a list of 21 experiences that ranged from have you ever been to a pig barn to have you ever taken a blood sample from a pig? The experience scores ranged from 1 – 9 with an average score of 3.8 or 18%. When this quiz was repeated at the end of the program, the knowledge level jumped to 91% and the experience to 92%. After each barn session there was a quiz given on the material covered for a total of 7 quizzes. (Quizzes are in [Appendix 2](#))



Journal club

One of the goals of the program was to introduce the students to mentors – this was done by conducting journal clubs based on case reports. Our four journal-club leaders included: Dr. Jeremy Pittman (by Skype), Dr. Janet Alsop, Dr. Bob Friendship and Dr. Cate Dewey. The participants were asked to prepare one question about the case and one question about being a swine veterinarian to discuss with the mentor. (The questions are in [Appendix 3](#)).

Other opportunities

The participants were on an email list and were invited to all OVC swine club meetings and were given additional opportunities for volunteer experiences. The opportunities offered were presentations on coccidiosis (by representatives from Bayer), pet pigs (by Dr. Sue Burlatschenko), and nutrition (by Drew Woods from Nutreco). Students were also invited to volunteer at the swine club display for College Royal (University-wide open house). Some students also participated in on-farm data collection with a researcher than involved pig castration. (As an aside, two fourth- year DVM students participated in the journal club lead by Dr. Pittman).

Final Evaluation

The participants were asked to evaluate the program. If we look at what our goals were for the program I think we can definitely say that they were met. Student comments about whether the program increased their interest in swine: “Increased interest and appreciation of swine industry (3); opened eyes to opportunities/roles available; good hours; made me consider going into food-animal medicine; enjoyed population aspect of swine medicine”. Through the journal clubs and other opportunities that were given to them, they had contact with a maximum of 8 swine veterinarians, two technicians, a swine nutritionist and the producer. It was interesting to note that the different students were encouraged by different mentors and at different journal clubs, for a variety of reasons, making it clear that the more people the students can have contact with the more likely they are to connect with someone who really inspires them. Nine of the twelve students involved have applied to vet school for September 2011, I do not expect that they will all become swine veterinarians but I do think that some of them will enter mixed or food-animal streams due in part to this program. I believe they will be more likely to join the swine club in veterinary school giving them more opportunities to consider swine medicine as a viable choice. There were two comments made about why they would be hesitant to pursue swine medicine these were a fear of the economic situation for swine and air quality in the barns. Some of the things they would like to see changed (if the program is offered again) were to have more contact with more producers and different barns and be able to go out with a swine vet. (Only one student was able to accomplish this because of time schedules). To sum up what the students thought of the program here were some of their additional comments about the program: “This program has been very valuable in educating me about the swine industry and influencing me to consider pursuing a career in swine medicine! Everyone involved was fantastic and I have learned so much. It was wonderful learning all aspects of the industry and to follow the pigs throughout their life cycle. Thank you so much for allowing me the opportunity to gain so much knowledge and experience from this program.”

When asked what more could be done to encourage students to enter swine medicine here were their remarks: Run the program again (6) – it was a rare opportunity; give more opportunities like this to more students while keeping the groups small; having journal clubs like ours would get students interested; being able to apply knowledge learned in classroom; shared with friends and they would all like the experience; programs like this are very effective; advertise the opportunities for swine experience; advertise at vet schools, allow hands-on experiences (2) – this is what definitely got me more interested in working with swine in the future; meet more producers and swine vets and learn more about being a swine vet. (Questions and answers [Appendix 4](#))

Getting the word out there:

Power point presentation to the student recruitment committee at the annual meeting in March/11

Editorial in the July issue of *JSHAP*

Appendices

1/ [Information handouts](#)

2/ [Quizzes](#)

3/ [Questions that were submitted for Journal clubs](#)

4/ [Exit evaluation](#)