Global Perspectives Grant Project Report

Project Title: Genomics and Genetics Research for Beef Cattle: Where's the Economics?

This Global Perspectives grant proposal was designed to bring Professor Garry Griffith from University of Melbourne, Australia, to University of Wyoming for the purpose of launching a collaborative research partnership to model economic returns and distribution of returns to investments in beef genomics research and prediction technologies.

Principle Investigators: Nicole Ballenger (PI) (*nicoleb@uwyo.edu*), Matt Andersen (co-PI), and Chris Bastian (co-PI), Department of Agricultural and Applied Economics; and Kristi Cammack (co-PI), Department of Animal Science

Award period: Fall 2014 (with future collaborations expected to continue through 2017).

Amount Spent: $3,385 (the amount requested)

Professor Garry Griffith (University of Melbourne, and formerly University of New England, Australia) visited University of Wyoming during the fall of 2014. Dr. Griffith is an internationally recognized expert in economic modeling of the livestock sector. His work has focused on assessing economic benefits of technological change in the beef cattle, pig, and dairy industries. Recently he and colleagues have analyzed returns to the Australian government's investment in beef genetic technologies. Beef cattle operations are the most important source of agricultural receipts in Wyoming, and genomic prediction technologies are of increasing interest within the beef industry nationwide. We therefore felt we could benefit from Dr. Griffith's expertise, from learning more about how he modeled and analyzed returns to genomic technologies in Australia, and from initiating a research collaboration to extend his modeling work to the United States and Wyoming. We asked Dr. Griffith if he would collaborate with us on an Agricultural Experiment Station grant to look at economics of beef genomics, and he concurred. That grant has since been awarded to the PIs listed on this report.

Dr. Griffith's visit advanced our research goals and provided a unique learning opportunity for our graduate students. During the week-long visit he:

- Presented a research seminar for agricultural economists and animal scientists in the College of Agriculture and Natural Resources on the results of the study aimed at assessing returns to beef genetic technologies in Australia.
- Conducted a hands-on workshop on equilibrium displacement modeling (EDM) and its application to technological change, with examples for livestock. Most of the Agricultural Economics graduate students and several of our faculty participated.
- Accompanied Drs. Ballenger and Andersen to the US Meat Animal Research Center (MARC) in Nebraska to meet with director John Pollak and several scientists conducting beef genomics research.

The new collaboration with Dr. Griffith is likely to continue for several years as we ramp up our expertise in beef genomics technologies and pursue research on their economic implications. A couple of near term benefits have been realized already, however. For example, Dr. Ballenger developed and submitted a proposal to the Agricultural and Applied Economics Association (AAEA) for an organized symposium on the economics of beef genomics research, to be held at the Association's annual meeting in the summer of 2015. Dr. Griffith contributed to the development of that proposal. The proposal was accepted, and the conference session will bring together agricultural economists from several universities in the U.S., Canada, and Australia to discuss what we know and need to learn about the benefits of beef genomics research for beef industry participants. In addition, in large part because of Dr. Griffith's visit to UW and our trip with him to the USMARC, University of Wyoming agricultural economists have been invited to collaborate on a USDA NIFA grant application on "Decision Support in Beef Cattle Breeding," being prepared now by scientists at MARC, University of Nebraska, Kansas State, and Colorado State. In short, the Global Perspectives grant has already increased opportunities for collaborative work with other institutions on an issue that has potentially significant implications for the Wyoming beef sector. The opportunity to join research partnerships with institutions that share our keen interest in the economic performance of the beef cattle industry will leverage and add value to our in-house research expertise.