Keith Betteridge – Prostoglandin- induced embryonic loss in pregnant mares

In the last decade or so, technology has expanded scientists' understanding of pregnancy in horses. For example, ultrasound has helped veterinarians and researchers determine early signs of pregnancy in horses, as early as within the first month after conception. Researchers found that the rate of conception in horses was much higher than previously thought. By using ultrasound technology, they found that the pregnancies were often being terminated within that first month; mares were conceiving, but they weren't carrying the offspring to full term.

It's known that a spike in prostaglandin levels causes early embryonic loss – but what triggers this release of prostaglandin? Dr. Keith Betteridge, a professor and researcher at the Ontario Veterinary College, seeks to answer this question. In the past, scientists believed the embryo was a "passenger", only receiving signals from the mother. But that's not the case – it turns out the mother and embryo communicate with each other. Betteridge's research involves studying what and how they communicate. The results of this research will be important for further studies being done in the field of Developmental Origins of Health and Disease. It's a new area exploring how factors, such as the mother's diet while the offspring is in utero and the environment, affect the offspring throughout its life. Evidence of these factors are well-documented in humans, such as the Dutch famine of 1944, when starving pregnant women produced generations of

underweight offspring with varying health problems. Furthering this research means scientists can determine what needs to be communicated to produce healthier offspring, and optimize breeding programs based on the factors involved. Offspring benefit the most from this research, but the mothers also indirectly gain too; scientists could potentially identify horses that are susceptible to early embryonic loss, and even protect against its occurrence.