

# New technologies advance livestock genomics for agricultural and biomedical uses

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(Phys.org)—New genome editing technologies developed at the University of Minnesota for use on livestock will allow scientists to learn more about human diseases.

The genomic [technique](#), known as TALENS, is described in a report published today in the scientific journal [Proceedings of the National Academy of Sciences](#). The technique is cheaper and faster than previous technologies that allow scientists to genetically modify [livestock animals](#); the animals are used to learn more about human diseases, which in turn can help researchers develop cures. U of M scientists and their collaborators used the technique to develop a swine model of [cardiovascular disease](#) in the diabetes-prone Ossabaw miniature pig.

The TALENS technique also can be used in agriculture, the paper notes, allowing livestock breeders to encourage or discourage a particular trait.

"Our efforts continue a long tradition of responsible animal breeding and research for the betterment of mankind," said Scott Fahrenkrug, an associate professor of [animal science](#) at the university and lead author of the *PNAS* paper.

Collaborators on the paper are from Texas A&M, the Roslin Institute at the University of Edinburgh and Recombinetics, a Twin Cities-based company created in 2009 to commercialize the techniques created at the University of Minnesota. The group's work and the TALENS technique also recently were highlighted in the journal *Nature*.

"This work embodies the effective translation of university research into meaningful applications that support Minnesota business," Fahrenkrug said. "We are proud to produce positive social and economic outcomes."

Provided by University of Minnesota

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