

Research Progress and Impact

Providing Basic Research for New Discoveries

Research accomplishments and examples of how base funding supports work at MSU:

A team of Michigan Agricultural Experiment animal scientists recently identified a gene that controls embryo development in cows. This gene may someday offer clues into the causes of infertility in women.

The new egg-specific gene, JY-1, is necessary for embryonic development in dairy cows. Besides potentially offering the dairy industry more solutions for the infertility problem that costs it more than \$1 billion per year, the new gene provides clues into the egg's role in embryo development and may ultimately provide new options for the more than 9.3 million women treated annually for fertility problems.

Cows are a better model for human fertility research than the standard mouse model. Like women, cows usually release a single egg and give birth to one offspring at a time. Mice, in contrast, release multiple eggs and give birth to litters of pups.

The next step is to determine how the gene is regulated and how different levels of the protein affect fertility.

For questions about this or other MAES publications, contact contact Val Osowski (osowskiv@msu.edu; 517-355-0123).

109 Agriculture Hall
Michigan State University
East Lansing, MI 48824-1039

All USDA project reports are peer-reviewed.



MAES animal scientist George W. Smith's identification of a gene that controls embryo development in cows may have human applications.

Facts on Federal Base Funding in the Michigan Agricultural Experiment Station

Federal base funding provides the foundation for Michigan's agriculture, natural resources, human nutrition, rural development, and family, youth and community well-being research programs. Hatch funding provides infrastructure support for research done by scientists at state agricultural experiment stations. This federal as well as state funding ensures that strategic research is done to meet the needs of state residents and their local concerns.

This funding helps the Michigan Agricultural Experiment Station:

- Respond quickly to emerging and evolving issues.
- Maintain long-term research in areas fundamentally important to Michigan.
- Support work that initially doesn't seem to have commercial application or is not appropriate for national competitive grant programs.
- Build long-term public and private partnerships. These partnerships cannot be created by competitive grant funding.
- Develop regional partnerships among neighboring states.

Michigan-critical projects receiving federal base funding:

- Developing processes and products to meet the growing demand for renewable, easily recyclable consumer goods, fuels, chemicals and energy.
- Boosting economic development and community revitalization in areas hard hit by unemployment and emigration of industry.
- Examining how land use choices in Michigan relate to issues vital to the state's citizens, including quality of life, income levels, obesity, school funding, the environment and zoning.
- Protecting Michigan from emerging infectious diseases through research to help detect and track diseases in humans, plants and animals.
- Promoting food and health through research on food safety, nutritional enhancement of foods, and general nutrition and diet.

Research for your future.

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