

## Sanford Research scientists develop animal model to study neurodegenerative disease

Published on November 4, 2015 at 2:27 PM

Sanford Research scientists have developed a pig model for a neurodegenerative disease that could help better treat the disorder and other physiological conditions. The findings of the project are published in *Human Molecular Genetics*.

Sanford Research President David Pearce, Ph.D., staff scientist Rosanna Beraldi, Ph.D., scientist Jill Weimer, Ph.D., and their team of investigators engineered the pig model to replicate ataxia telangiectasia (AT), a progressive multisystem disorder caused by genetic mutations in the AT-mutated gene.

The study is titled "A novel porcine model of ataxia telangiectasia reproduces neurological features and motor deficits of human disease."

AT causes neurological degeneration and motor impairment, primarily in children. Its progression is accompanied by immune disorders and increased susceptibility to cancer and respiratory infections.

"The creation of a more accurate animal model can help bring research of this condition closer to application in human disease," said Pearce. "We are particularly interested in the role of the AT-mutated gene in the progression of this disease and how treatment methods for similar physiological conditions might benefit from this pig model."

While several mouse model have been produced for AT, the Sanford Research pig model better replicates the neurological characteristics of the disease, according to Pearce.

Sanford Research often replicates diseases in animal models to explore therapeutic approaches. Last year, Pearce's mouse model for Batten disease, a group of rare neurodegenerative disorders in children, was also outlined in *Human Molecular Genetics*.

The pig model developed for AT was created in partnership with Exemplar Genetics, an Iowa-based biotechnology company that specializes in porcine models.

Human Molecular Genetics concentrates on full-length research papers covering a wide range of topics in all aspects of human molecular genetics.

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Sanford Health

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