



Cornell University College of Veterinary Medicine

Baker Institute for Animal Health

DEDICATED TO THE STUDY OF VETERINARY INFECTIOUS DISEASES, IMMUNOLOGY, GENETICS, AND REPRODUCTION

[Home](#) > [Departments, Centers and Institutes](#) > [Baker Institute](#) > [News](#) >

Introducing the Canine Embryonic Atlas

Scientists investigating genetic and developmental diseases in dogs now have a new research tool for helping them track down the cause of these diseases.

Vicki Meyers-Wallen, Associate Professor of Genetics and Reproduction at the Baker Institute has released the Canine Embryonic Atlas, a publicly available compilation of photos of dog embryos from different stages of development.

"I think the Canine Atlas will be a valuable tool for anyone working on dog genetics, development, or reproduction," said Alexander Travis, Professor of Reproductive Biology at the Baker Institute. "Whether it's for domesticated breeds or endangered canid species, it's providing a foundation of data that other researchers can build on."

Dogs are excellent companion animals and research models, but scientists know little about early dog development. In the early 1990s, Meyers-Wallen began performing microdissection of dog embryos at different stages because she needed to know when the reproductive organs first appear in the dog embryo for her research into inherited disorders of sexual development. She decided to photograph and archive additional organ systems at the stages she investigated in the hopes of creating this tool for canine researchers.

Meyers-Wallen also provided canine embryonic organ samples at different developmental stages to Elinor Karlsson, Director of the Vertebrate Genomics Group at the Broad Institute, whose lab group sequenced the RNA of those organs. The RNA data reveals which key genes are turned on during each developmental stage to control organ development. Users will soon be able to access that data and to map such genes to their location on the [dog genome](#). Researchers will then be able to relate mutations in key genes to specific stages of organ development, and better understand how the mutation causes the developmental disorder. That is a big first step toward preventing or treating such disorders.

"All of these online resources are tremendous tools to advance research," said Meyers-Wallen. "The Canine Atlas will enable researchers to develop new genetic tests for developmental diseases, without even touching a dog, except to get a DNA sample."

The release of the Canine Atlas is just the beginning. Scientists can send images and genetic data from their own canine research and the Baker Institute will curate the submissions for addition to the Atlas. The Institute's faculty hopes that the Canine Atlas will be a valuable resource for investigating canine disorders, and for scientists studying dogs as a model for human disease.

