

The Search for Genes that Control Growth in Purebred Dogs

Dr. Nathan Sutter is a geneticist at Cornell College of Veterinary Medicine working to understand growth control in purebred dogs. His laboratory is searching for genes that make dogs big or little. Because dog breeds vary enormously in size, they are a powerful resource for finding these genes.

Below is his request for DNA samples to aid in his research:

Dear Dog Owner,

I'm writing to ask for your help in finding genes that make dogs big or little. Would you be willing to donate blood samples from your purebred dogs, or do you know other owners who may help? Contributing samples is easy. Please see the details below and contact us if you're interested.

Thank you very much for helping to make our dog genetics research possible!

With kind regards,
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How you can contribute:

Email us back to learn more about our research or arrange a mailing. We'll send you instructions, a consent form and empty blood collection vials in a convenient mailer that is approved by the postal system. Blood can be shipped back to us at ambient temperature (no cold packs are needed). Most people ask their veterinarian to collect the blood during a routine visit.

For our genetic research we also ask you to collect a set of body measurements of each dog; we will send you a measuring tape and set of illustrated instructions. Measurement takes 20-25 minutes. Finally, we ask for a pedigree so we can avoid studying close relatives. This is also why, if you should provide samples from more than one dog, we'll ask for dogs that are not closely related (no shared parents or grandparents). Note, we will NOT identify any of your dogs by registered name or owner name in any of our scientific or lay communications about our work.

About our lab:

We helped to find the first identified body size gene in the domestic dog. This gene, insulin-like growth factor-1, is known to also play roles in human height, cancer, growth and aging. We are currently continuing the search for dog size genes and also looking for retrotransposons, which are a kind of mutation common in the dog genome. Retrotransposons are known to cause several

different diseases in the dog (a sleep disorder, myopathy, eye disease, etc.). For both the size and retrotransposon studies we need samples from a wide variety of dog breeds. We are also collecting samples from the Yorkshire Terrier breed to enable us to study the genetics of protein-losing enteropathy, an extremely debilitating disease.

Although I am a dog geneticist, my research in body size genetics has broadened out in the last three years: my lab now also studies size in horses and rabbits as well as in dogs. If you own purebred horses or rabbits and might like to contribute samples from them, please contact us for more information. Thanks!

Sutter lab members who may correspond with you: Jeremy Allen, Eve Waters, Carissa Smith, Maryanne Luther, Mytien Nguyen, Nikki Kimura and myself