

Participation:

The Symposium is open to all MSU faculty, staff, graduate and undergraduate students, as well as members of neighboring institutions and the community.

Poster Session:

A poster session and open reception in the Molecular Plant Science atrium will be held in the afternoon. Light refreshments will be served. Those who wish to present a research poster (4'x4') are invited to do so.

Posters do not need to be related to the topics of canine and feline genetics and genomics. Graduate students and faculty associated with the Genetics Graduate Program are particularly encouraged to participate.

Please RSVP with the title of your poster to reserve a poster space by email to Jeannine Lee: genetics@msu.edu

Event Coordinators:

Dr. Andràs Komáromy
- Small Animal Clinical Sciences

Dr. Simon Petersen-Jones
- Small Animal Clinical Sciences

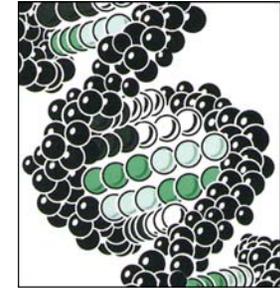
Dr. Patrick Venta
- Microbiology & Molecular Genetics

GENETICS GRADUATE PROGRAM

The MSU Genetics Program is an interdisciplinary, degree-granting program that provides graduate education and training to students whose primary interest lies in the realm of modern genetics. The approximately 120 faculty members in the Genetics Program have academic appointments in 23 different departments, or work in affiliated institutions, such as the Van Andel Research Institute in Grand Rapids, or USDA facilities at MSU. Although these departments and units are affiliated with eight different Colleges, the College of Natural Science is the home and sponsor of the Genetics Program.

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MICHIGAN STATE UNIVERSITY



Genetics PhD Program Mini-symposium

Genes and Genomes of Dogs and Cats

Thursday, May 29, 2014

8:30 a.m. to 5:30 p.m.

Molecular Plant Science Building
Michigan State University

Schedule:

- 8:30– 9:30 **Registration and Poster Set-up**
Continental Breakfast
Molecular Plant Science Atrium
- 9:30-9:35 **András Komáromy , MSU**
Welcome and Opening Remarks
- 9:35-10:00 **Paige Winkler and**
Ethan Dawson-Baglien,
MSU Genetics Graduate Students
Symposium Introduction
- 10:00 –11:00 **Adam Boyko, Ph.D.**
Mapping the Genetics Basis of
Phenotypic Variation in Purebred
and Free-ranging Dogs
- 11:00-11:15 **Break**
- 11:15-12:15 **Leslie Lyons, Ph.D.**
99 Lives Cat Genome Initiative
- 12:30—2:00 **Lunch, MPS Atrium**
- 2:00—2:45 **Poster Session I**
MPS Atrium
- 2:45—3:30 **Poster Session II**
MPS Atrium
- 3:30– 4:30 **Elaine A. Ostrander, Ph.D.**
Good Dogs with Bad Genes:
Informing Human Health
- 4:30—5:30 **Reception, MPS Atrium**

Speakers:

Adam Boyko, Ph.D.



Assistant Professor,
Biomedical Sciences,
College of Veterinary
Medicine,
Cornell University

Leslie Lyons, Ph.D.



Gilbreath-McLorn
Endowed Professor of
Comparative Medicine,
Department of Veterinary
Medicine & Surgery,
College of Veterinary
Medicine,
University of Missouri,
Columbia

Elaine A. Ostrander, Ph.D.



Chief and Distinguished
Investigator of the Cancer
Genetics Branch,
National Human Genome
Research Institute,
National Institute of Health

Genes and Genomes of Dogs and Cats

Dr. Boyko's research is focused on genomic investigation of dogs as a model of genetic disease and evolutionary genetics. In particular, we are interested in understanding how the forces of natural and artificial selection have shaped the domestic dog genome and the genetic architecture underlying the tremendous diversity we see in dogs today. Our research involves both purebred dogs but also genetic analysis of semi-feral "village dogs" throughout the world in our effort to explore the evolution of dogs and the genetics of canine disease, morphological diversity, and behavior.

Dr. Lyons' research is focused on heritable diseases and traits, and the population dynamics of the domestic cat. Her program fosters new feline-based research by supporting sample distribution and building genetic resources for the community, including forensic science applications. Specific diseases of high priority include polycystic kidney disease, skin abnormalities, structural defects, and two forms of heritable blindness. These look forward to the development of drug and gene therapies, and to develop the cat as an animal model for human disease. Dr. Lyons' lab has also supported the community by providing DNA studies for the first cloned domestic cat, wildcat, Sand Cat, and the GFP transgenic cat.

Dr. Ostrander: Domestic dogs represent closed breeding populations produced as a result of differential selection for traits associated with both behavior and appearance. This practice, coupled with small numbers of founders for many breeds has generated a population that is ideal for mapping genes underlying morphology, behavior, and disease susceptibility. Today we will update recent advances in the canine genome project and current approaches for finding genes controlling both simple and complex traits. We will discuss, specifically, studies aimed at finding genes controlling body morphology and skull shape, as well as disease susceptibility. We will consider ways in which the statistical methods developed for mapping morphologic traits can be used to find disease genes of interest for both human and canine health. Our interest in health focuses on cancer, and we will consider sarcomas as an example of how the canine system can inform our understanding of comparable human diseases.