



The Golden Retriever Lifetime Study

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www.caninelifetimehealth.org

An observational lifetime study conducted in dogs

Developed to yield valuable information on cancer:

- Incidence and risk factors – gene/environment, exposure
- Prevention strategies & hypotheses
- Early detection technology – biomarker development
- Interventional hypotheses

Comparative aging and longevity research.

Characterization of major diseases and conditions.

GRLS Development & Enrollment

Development 2008-2012

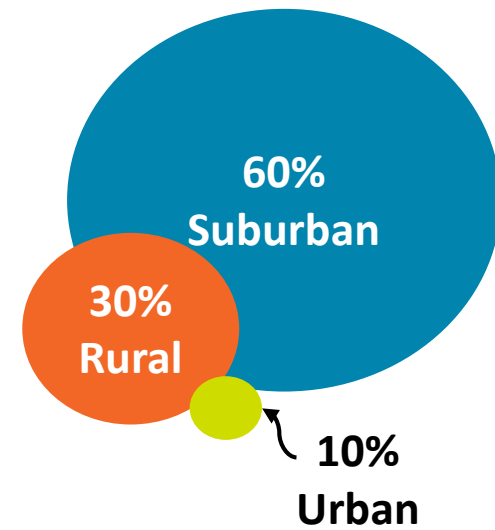
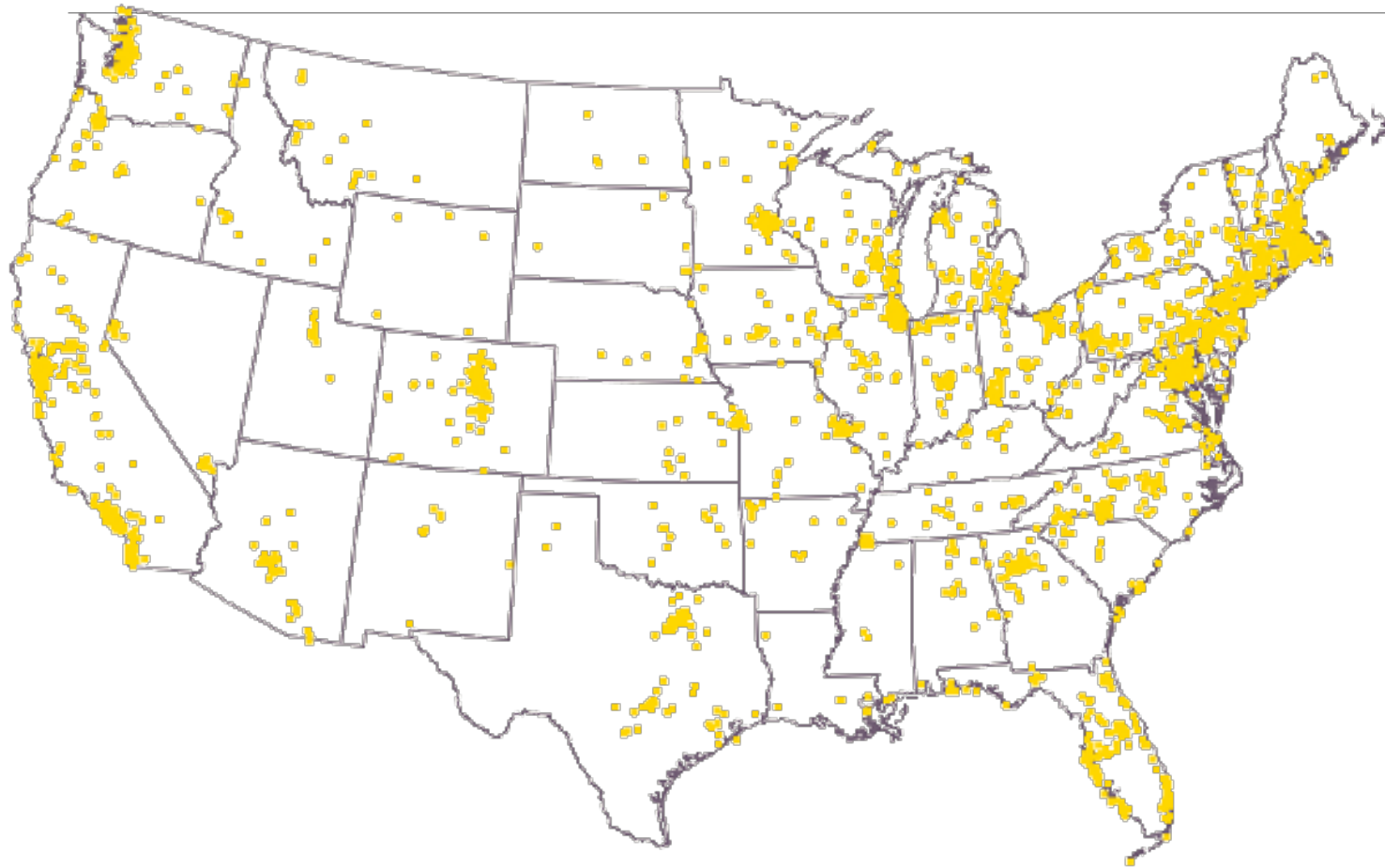
- Popular pure breed dogs with high cancer burden
- High likelihood of owner/vet compliance
- Geographical and reproductive diversity
- Preserve Owner-Primary Veterinarian relationship
- Endpoint selection
- Multiple expert-panel workshops
- Laboratory & Biosample collections
- Questionnaires and EMR development

Enrollment 2012-2015

- Population recruitment challenges
- Social Media marketing

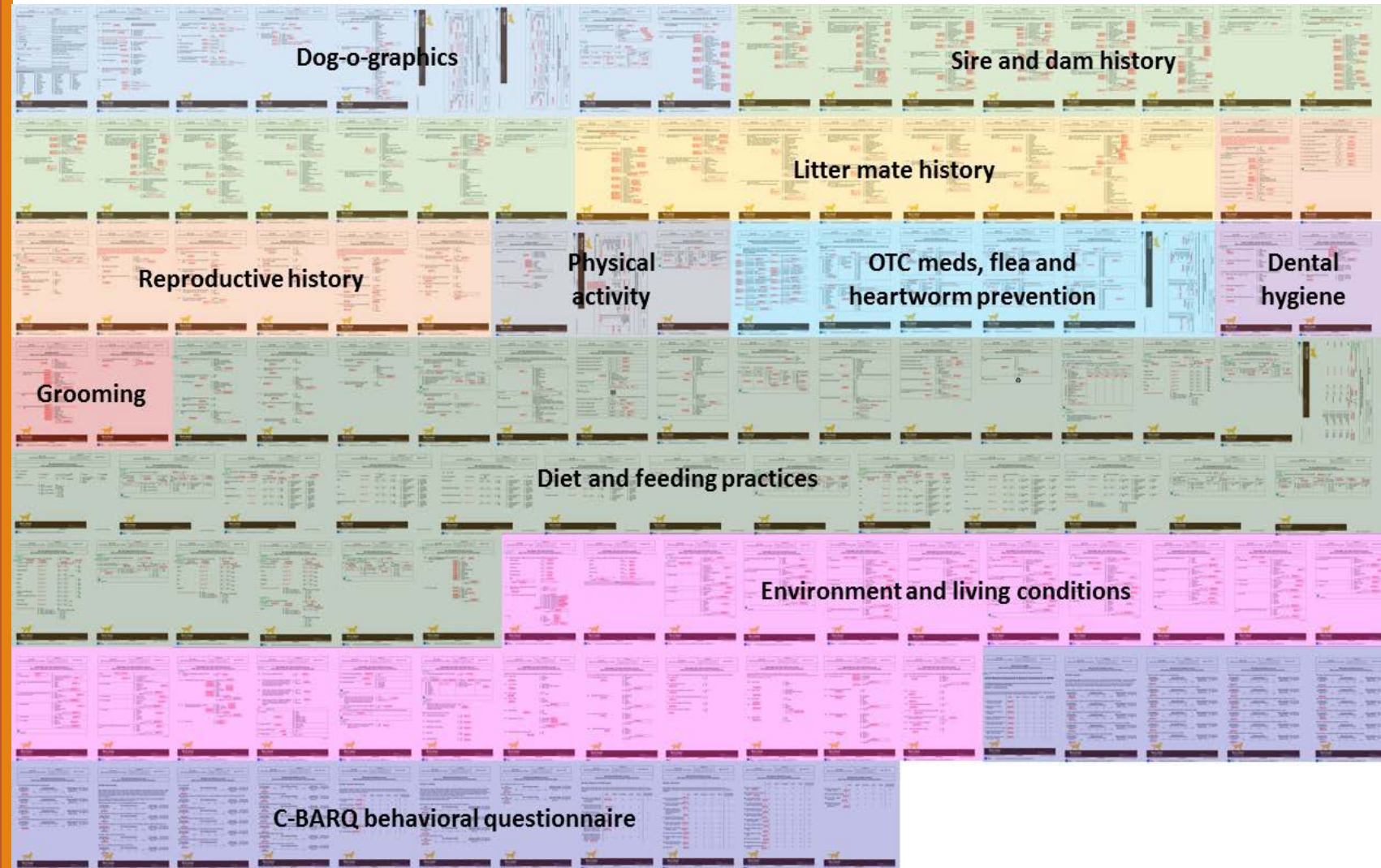


Geographic Distribution



Annual Data Collection

- Origin, pedigree, parental history
- Reproductive history - extensive
- Dental care and grooming history
- Vaccine and Inf Dz preventative history
- Diet and feeding practices - extensive
- Activity/Lifestyle
- Exposures at home & external environment – extensive.
- Behavior & Temperament
- Cognitive Function
- Osteoarthritis Scoring
- DVM Documented Medical Events

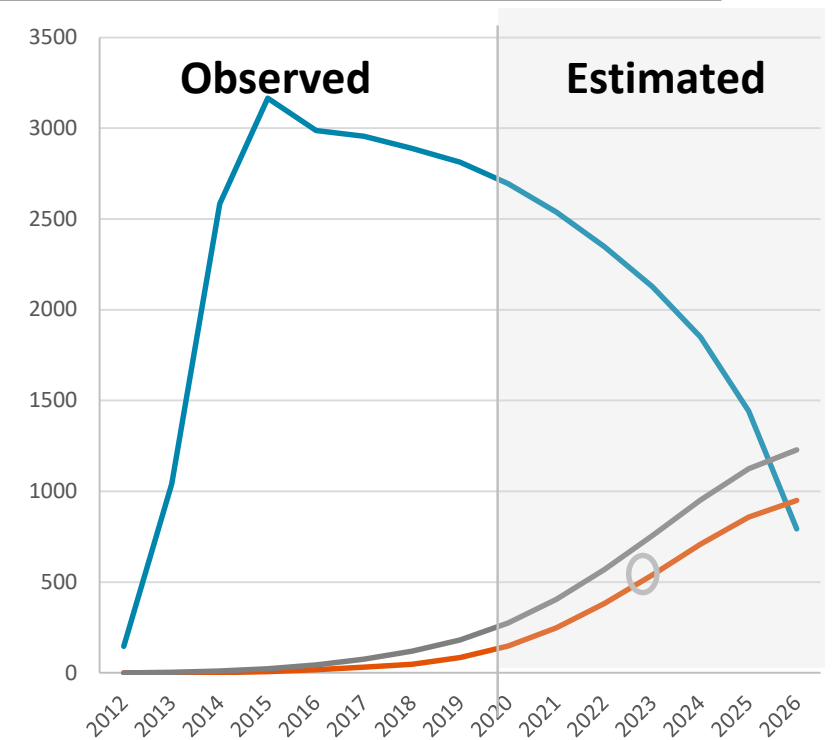


GRLS Retention and Operations

Retention and Operations 2015 -Current

- Social support networks
- Owner-Veterinarian relationship
- Tumor Classification & Endpoint Adjudication
- Genotyping – currently in process
- Data Commons
- Necropsy

Confidence	Tier	Category
Definitive	1 microscopically confirmed	Positive histology – adjudicated
		Positive cytology
		Positive microscopic confirmation, method not specified
Presumptive	2 not microscopically confirmed	Direct visualization without microscopic confirmation
		Visualization via imaging w/o microscopic confirmation
	3 clinical suspicion	Clinical diagnosis only



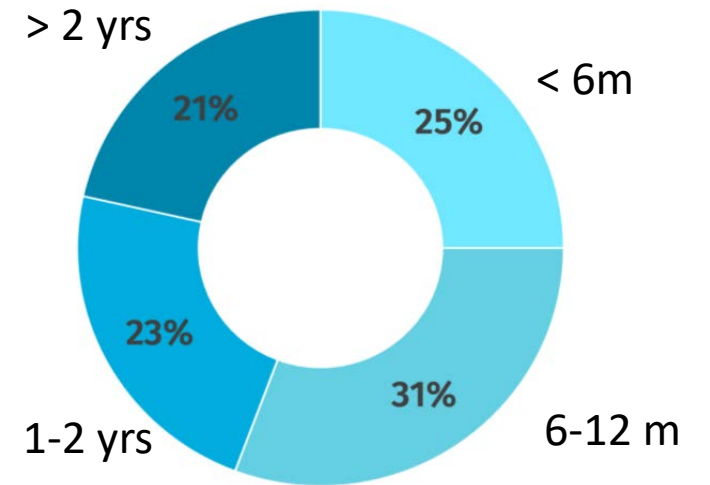
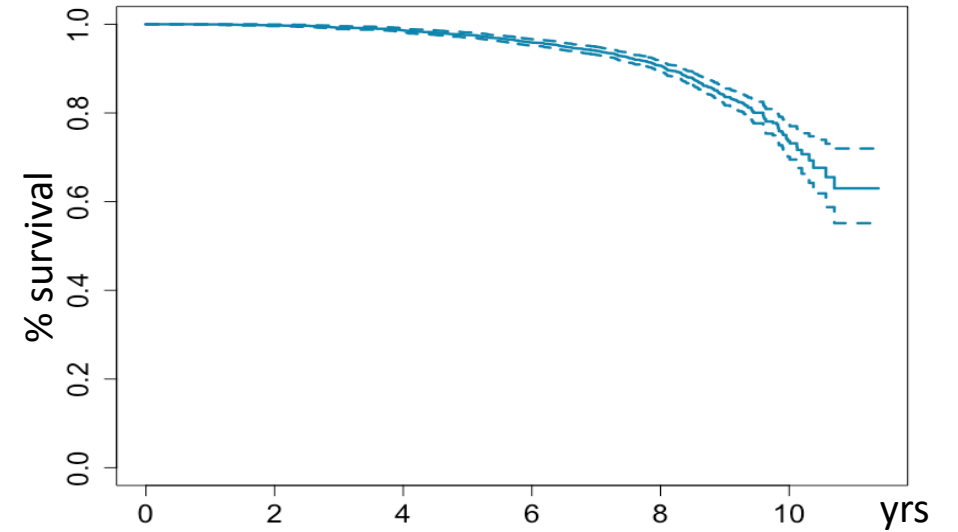
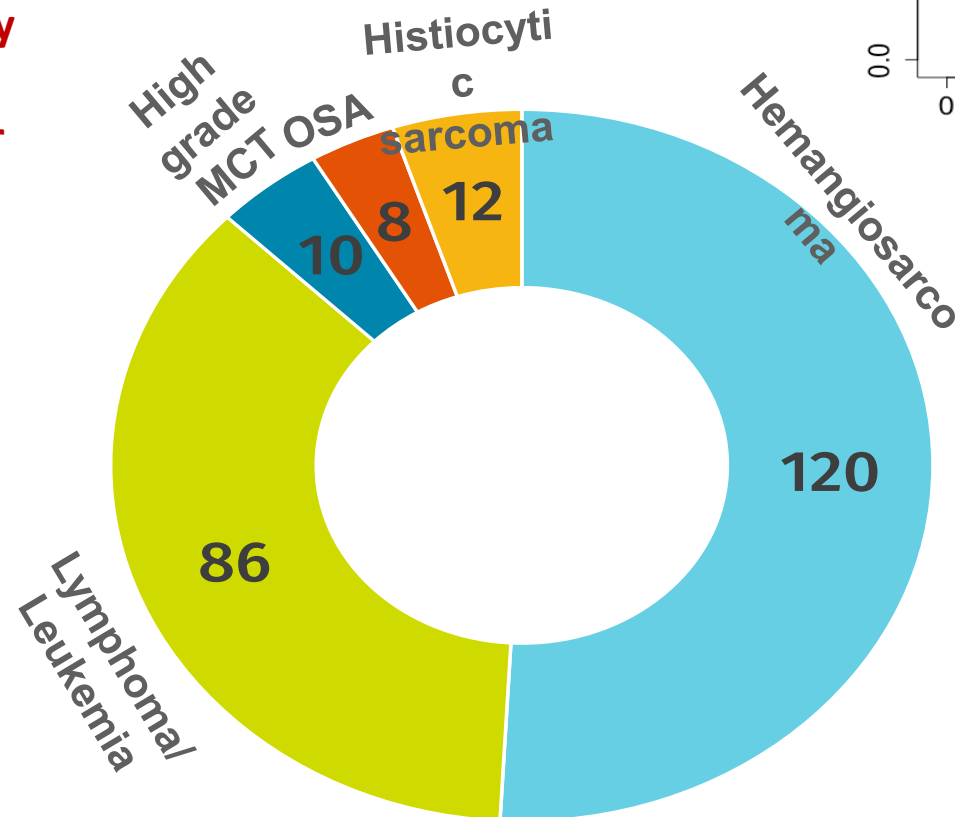
June 2021



2717: Owners
2038: Veterinarians
Many Volunteers

Median Age of Cohort ~ 8.5 y
> 1,000,000 sample aliquots
352 dead/66% due to cancer
66% Necropsy Rate
85% compliance @ 10 yrs

Lymphoma Phenotype:
~ 30% B-cell
~ 30% T-cell
~ 30% not phenotyped



Age at spay/neuter among
1,716 gonadectomized dogs

Translational Opportunities:

- ✓ Exposure/Outcome Predictions and Mitigation
- ✓ Obesity comparisons
- ✓ Diet, lifestyle, environmental exposure
- ✓ Owner engagement and parallel study

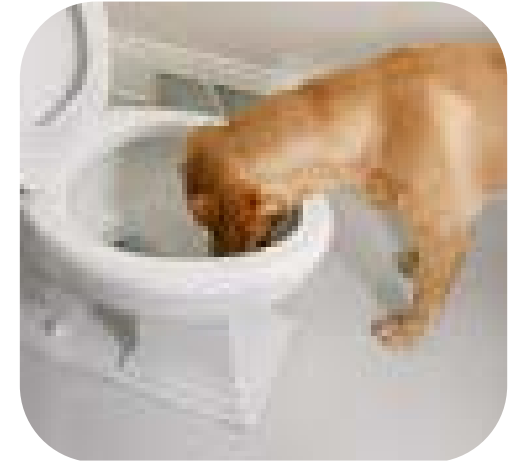
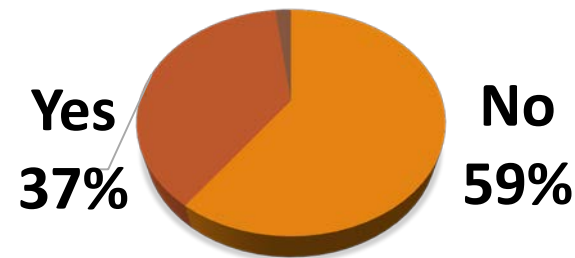


**33%
overweight
(BCS 6-7)**



**4% obese
(BCS 8-9)**

Is yard treated to
control weeds or
insects?





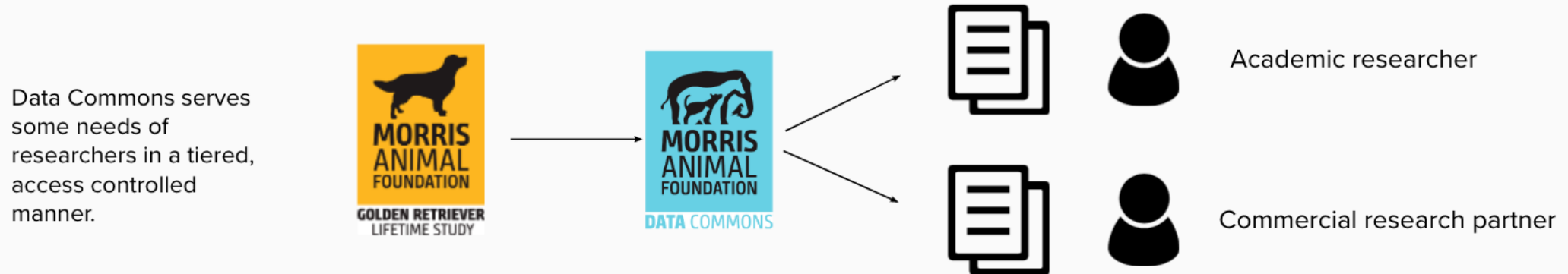
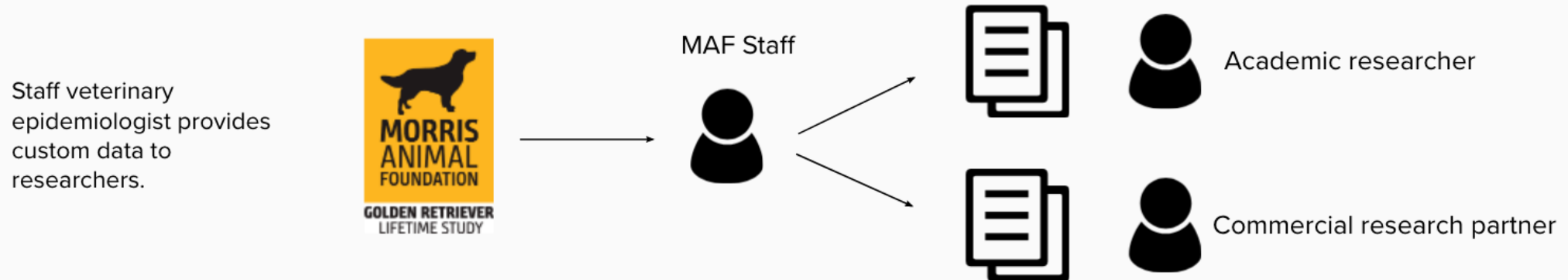
Golden Oldies Project

Identify “cancer controls”: GR dogs > 12 years old
to compare to GRLS dogs with cancer

Over 200 samples collected and in process for
genotyping with the entire GRLS cohort

GRLS Data Commons

<https://www.morrisanimalfoundation.org/data-commons>



What kind of data?

Behavior

Conditions

Diet

Environmental Conditions

Washing and Grooming

Reproductive History

Physical Exam

Dental Care



221 Categories

Request for Proposals

<https://www.morrisanimalfoundation.org/golden-retriever-lifetime-study-rfp>

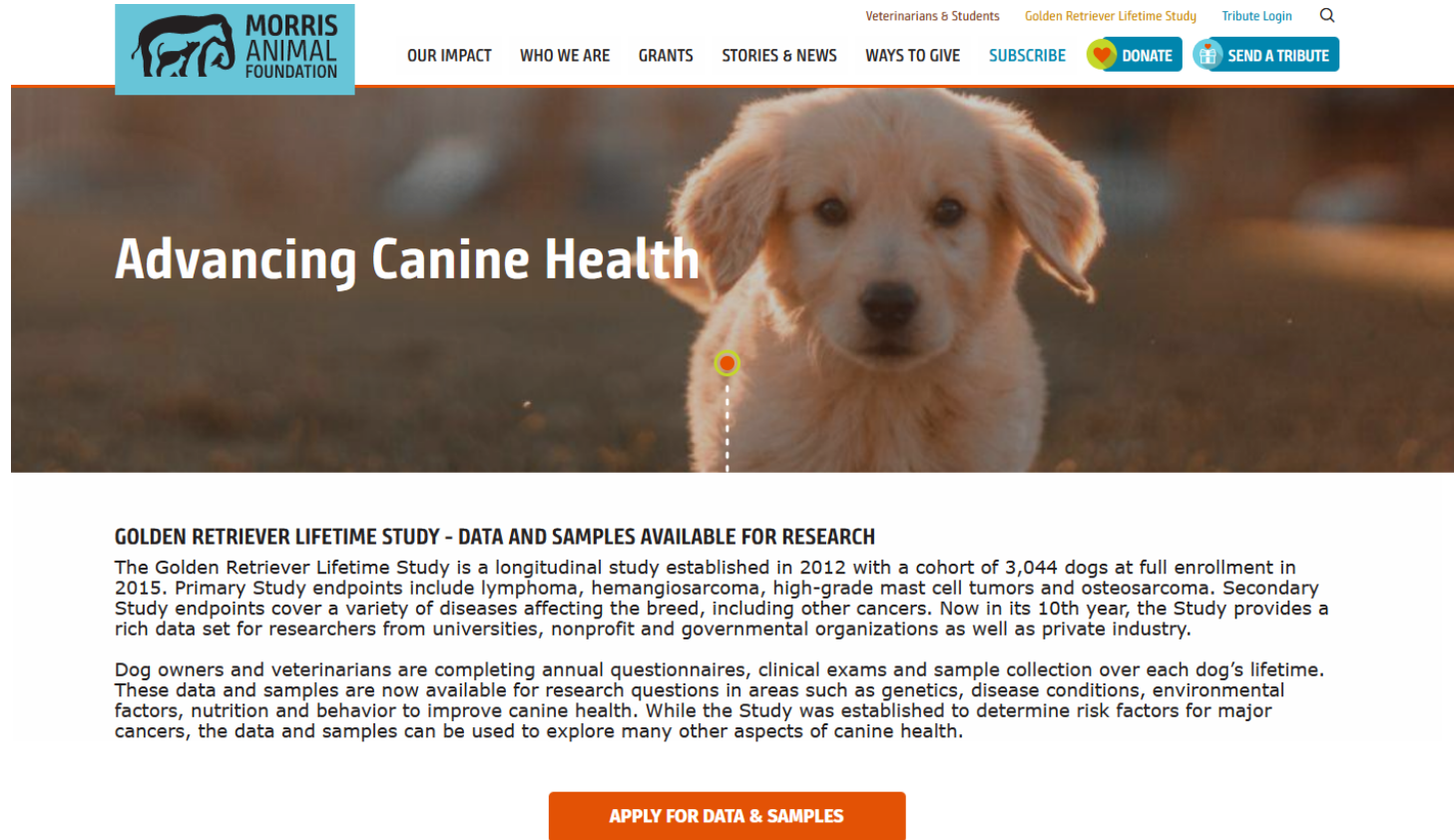
OPEN 11/15/21 – 1/14/22

REOPENING QUARTERLY

New, revamped webpage

New researcher toolkit includes:

- Flowchart of application process
- Dashboard of primary and secondary endpoints
- Digital copies of questionnaires
- In-depth descriptions of sample types/data available
- List of approved applications
- FAQs



The screenshot shows the Morris Animal Foundation website. The header includes the logo, navigation links (OUR IMPACT, WHO WE ARE, GRANTS, STORIES & NEWS, WAYS TO GIVE, SUBSCRIBE, DONATE, SEND A TRIBUTE), and links for Veterinarians & Students, Golden Retriever Lifetime Study, and Tribute Login. The main banner features a golden retriever puppy and the text "Advancing Canine Health". Below the banner, the section "GOLDEN RETRIEVER LIFETIME STUDY - DATA AND SAMPLES AVAILABLE FOR RESEARCH" is highlighted. The text describes the study as a longitudinal study established in 2012 with a cohort of 3,044 dogs at full enrollment in 2015. It lists primary endpoints (lymphoma, hemangiosarcoma, high-grade mast cell tumors, and osteosarcoma) and secondary endpoints (various diseases affecting the breed). It also mentions that the study provides a rich data set for researchers from universities, nonprofit and governmental organizations, and private industry. A call to action button "APPLY FOR DATA & SAMPLES" is located at the bottom right.

GOLDEN RETRIEVER LIFETIME STUDY - DATA AND SAMPLES AVAILABLE FOR RESEARCH

The Golden Retriever Lifetime Study is a longitudinal study established in 2012 with a cohort of 3,044 dogs at full enrollment in 2015. Primary Study endpoints include lymphoma, hemangiosarcoma, high-grade mast cell tumors and osteosarcoma. Secondary Study endpoints cover a variety of diseases affecting the breed, including other cancers. Now in its 10th year, the Study provides a rich data set for researchers from universities, nonprofit and governmental organizations as well as private industry.

Dog owners and veterinarians are completing annual questionnaires, clinical exams and sample collection over each dog's lifetime. These data and samples are now available for research questions in areas such as genetics, disease conditions, environmental factors, nutrition and behavior to improve canine health. While the Study was established to determine risk factors for major cancers, the data and samples can be used to explore many other aspects of canine health.

APPLY FOR DATA & SAMPLES

Acknowledgements



MAF Team and Trustees

Scientific Steering Committee

Heroes, Owners, Veterinarians and Volunteers

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