Small samples, large impact: inside Cornell’s cutting-edge Biobank

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Over 3,000 animal diseases have a genetic connection, and nearly half can serve as models for human disease. On the frontlines of animal and human health, the Cornell Veterinary Biobank (CVB), a core resource at Cornell University’s College of Veterinary Medicine, drives breakthroughs in translational research and sets a global standard by being the first biobank to ever achieve International Organization for Standardization 20387 accreditation. The state-of-the-art facility collects, processes, tests, stores, and distributes biospecimens from both healthy and diseased animal participants. The CVB provides high-quality biological material and associated data to researchers around the world, accelerating scientific discovery and fueling advancements in precision medicine.

Partnering with organizations like the Dog Aging Project (DAP) and Morris Animal Foundation, the CVB has secured research grants to study healthy aging, unravel the mysteries of Alzheimer’s disease, and fight the battle against cancer.

As the world’s most ambitious canine health study, the DAP unites 50,000 enrolled dogs, their owners, veterinarians, researchers, and volunteers with a common goal: to understand how genetics and environment influence aging in both dogs and humans. The CVB plays a crucial role in storing and distributing DAP samples. This work empowers researchers worldwide to unlock the secrets of healthy aging, paving the way for better diagnostics and treatments for both canine companions and humans.

Funded by the National Institute on Aging, the CVB joined forces with the Brain Health Study, an extension of the DAP, to further investigate the potential links between Alzheimer’s disease and a similar condition in dogs called canine cognitive dysfunction (CCD). By studying CCD in dogs, researchers are working toward identifying biomarkers for Alzheimer’s disease, and developing new diagnostic tools and more advanced treatments. The CVB’s signature postmortem tissue collection program is central to this effort; it provides high-quality tissue samples, including healthy ones that are traditionally difficult to obtain, allowing researchers to make crucial comparisons between healthy and diseased tissues.

By partnering with the Morris Animal Foundation’s Golden Retriever Lifetime Study, the CVB helps to identify the nutritional, environmental, lifestyle, and genetic factors that contribute to cancer and other diseases in dogs. Data and samples from this ongoing study of 3,044 Golden Retrievers are available to researchers, ultimately aiming to improve the health of dogs and their humans.

To ensure the consistency, authenticity, and traceability of stored samples and their data, the CVB has an established quality management system based on standard operating procedures and provides researchers with the confidence that they are receiving samples fit for their research purpose. The CVB team is dedicated to continuous improvement of all biobanking processes, maximizing the usability of samples, and unlocking their full potential to advance medical research and lifesaving therapies. This commitment is reflected in the CVB maintaining the industry’s highest sample distribution rates.