When asked why she is pursuing a degree in veterinary cancer epidemiology, Audrey pauses for a moment and then says, “This is a sad story, but it was a pivotal event in my life.” Audrey is currently participating in a large, one-of-a-kind training program funded by Morris Animal Foundation that helps aspiring veterinary oncology researchers pursue new avenues in veterinary cancer care. Her journey to this program began 10 years ago after her first child, Aidan, was born with a rare but fatal birth defect.

“The doctors couldn’t tell me anything, couldn’t answer any of my questions,” Audrey says. “They said they didn’t know enough about this disease; they had no information.”

One year later, Audrey took a course in epidemiology in veterinary school and she instantly knew she had found not only her calling but also a way to honor her son’s memory.

“It just clicked for me. I knew that I needed to become an epidemiologist in order to find the causes of rare diseases,” she explains. “The cancer bug really bit junior year. I especially wanted to focus on the epidemiology of cancer prevention, a growing field in human medicine but relatively new to veterinary medicine.”

Audrey credits a Morris Animal Foundation grant for allowing her to pursue her passion. “It would’ve been impossible for me to pursue this unusual course of study without my Morris Animal Foundation fellowship,” she emphasizes.

This fellowship training program is one of several programs that Morris Animal Foundation launched in response to a growing need for veterinary research scientists. Two recent studies published by the National Academy of Sciences (NAS) identified “a shortage of veterinarians participating at all levels in biomedical research.” The NAS went on to describe the beneficial role veterinarians play in biomedical research and further defined the areas of unmet need in training of veterinary scientists.
Dear Fellow Veterinarians and Researchers,

Future animal health advancements can only happen with the help of dedicated, passionate veterinary scientists. Through our Veterinary Student Scholars and Fellowship Training Programs, Morris Animal Foundation provides financial support to pre- and postdoctoral students pursuing careers in animal health and biomedical science, helping to ensure there will be a next generation of scientists to advance animal health.

I am excited to announce that the Foundation has just awarded 25 veterinary students with stipends for summer research projects. Training fellowship proposals for DVM and PhD students are currently under our review, and for veterinarians who want to pursue PhD training, we have the Morris Animal Foundation Veterinary Fellowship for Advanced Study, a four-year training award.

Grant criteria and guidelines are available at www.MorrisAnimalFoundation.org. We are committed to training scientists who will generate the next best, great ideas to positively impact the health of cats, dogs, horses and wildlife throughout the world.

Message from Diane Brown, DVM, PhD, DACVP
Chief Scientific Officer
Morris Animal Foundation

Study Sheds New Light
ON FELINE LYMPHOCYTOSIS

By Dr. Kelly J. Diehl

From bizarre eosinophilia to stress hyperglycemia to Heinz body anemia, the results of feline blood work can be downright strange. Especially difficult can be the interpretation of lymphocytosis. Although lymphocyte expansions in dogs have been well-studied, there is a relative lack of information about the causes of lymphocyte expansion in cats. Two researchers at Colorado State University, Drs. Paul and Anne Avery, set out to study increased lymphocyte counts in cats by using a variety of molecular techniques. Their goals were straightforward: characterize the lymphocyte populations in cats with lymphocytosis and identify the underlying disease processes in these patients.

What these researchers found was that lymphocytosis is common in cats and often associated with non-neoplastic disease. They emphasized that cats should not be given a poor prognosis based only on a high lymphocyte count, even if it is repeatable, and that current methods using molecular markers for analyzing lymphocytes provide a great deal of information about cause and prognosis.

For more information:
- Review the techniques used in this study in “Molecular Diagnostics,” Avery et al., Withrow and MacEwen’s Small Animal Clinical Oncology 5th edition (2013).
- For molecular diagnostic tests discussed in the study, visit Dr. Anne Avery’s lab website: csu-cvmbs.colostate.edu/academics/mip/ci-lab.

New Partnership with Vet Supplier

Morris Animal Foundation has a new partnership with SmartPractice, a family-owned company that supplies products and services to veterinarians. Throughout 2014, SmartPractice will donate $1 from every veterinary order to the Foundation to support research that advances animal health around the world.

“Animal wellness is a core value of ours,” says SmartPractice’s Susan Nawrocki. “We know that by supporting Morris Animal Foundation, we are supporting a cause that is true to our hearts.”

SmartPractice is a family-owned company guided by a passion for Healthier Practices, Healthier Pets.

Learn more at www.smartpractice.com/vet

A Golden Commitment: Josh Stern, DVM

By Dr. Kelly J. Diehl

Josh Stern, DVM, knows how to follow his heart. As a recipient of a Zoetis–Morris Animal Foundation Veterinary Fellowship, Dr. Stern has studied the genetics of subaortic stenosis in Golden Retrievers and Rottweilers to identify genes associated with heart disease. He hopes to develop a diagnostic test for carriers of these defective genes and identify potential targets for interventional gene therapy.
Injection-site sarcomas (ISS) are rare but serious complications of subcutaneous injections in cats. Since these sarcomas were first described in 1991, numerous researchers have attempted to determine risk factors, define optimal treatment strategies and develop recommendations for subcutaneous medication and vaccine administration. Morris Animal Foundation has funded studies in these areas and our staff recently spoke to grant recipient Jessica Lawrence, DVM, DACVIM (Oncology), DACVR (Radiation Oncology), MRCVS, head of oncology at the Royal (Dick) School of Veterinary Studies, University of Edinburgh. See results from Dr. Lawrence’s Morris Animal Foundation-funded study in the June 2012 issue of Veterinary and Comparative Oncology.

**Morris:** What is known about how ISS develop in cats?

**Dr. Lawrence:** It is generally agreed that any injection that causes inflammation can lead to ISS formation, a concept supported by the finding of zones of inflammatory cells around these tumors. The inflammation leads to uncontrolled fibroblast proliferation and, ultimately, to tumor growth.

**Morris:** What injectable medications have been linked to ISS formation?

**Dr. Lawrence:** Vaccinations have been linked to tumor development, possibly because they are the most common injections administered to cats. However, any injection given to a genetically predisposed cat could lead to ISS formation if it causes inflammation. Long-acting steroids, antibiotics, insulin and even subcutaneous fluids have been implicated.

**Morris:** How should injection sites be monitored?

**Dr. Lawrence:** I stress the “3-2-1 rule.” If a mass is present for more than three months, even if it isn’t growing, biopsy it. If a mass is more than 2 cm in diameter, biopsy it. Finally, if a mass increases in size during a one-month period, biopsy it.

**Morris:** What is the most common question about ISS you hear from veterinary practitioners?

**Dr. Lawrence:** The questions I get concern treatment. I start by discussing the importance of staging tumors with advanced imaging (CT or MRI) prior to making any treatment decisions. ISS exert a tip-of-the-iceberg effect; what you see externally is rarely representative of the true extent of tumor infiltration. It is difficult to know whether surgery alone is the “right” decision without conducting advanced imaging.

**Morris:** What do you think is the most common misconception about ISS?

**Dr. Lawrence:** A general misconception is that the prognosis is poor. Although I would not prepare an owner for a cure in their cat, depending on the size, location and degree of infiltration of the tumor, we can often achieve long-term control with surgery with or without radiation therapy. Clients and referring veterinarians are often surprised when I offer multimodality treatment with enthusiasm and optimism!
After foaling, up to 10 percent of mares experience colonic volvulus, a painful and often fatal form of colic. With Morris Animal Foundation funding, Dr. Susan Holcombe and colleagues from Michigan State University found that high blood levels of nonesterified fatty acid and low levels of ionized calcium were associated with increased risk of colonic volvulus in periparturient mares. The team also discovered that gut bacteria change in post-foaling mares just before they develop large colon volvulus. The data indicate that monitoring these factors may help to identify at-risk mares, allowing veterinarians to implement prevention strategies that would result in more favorable outcomes.

**Monitoring two blood indices and gut bacteria may help identify mares at risk of developing colic**

After foaling, up to 10 percent of mares experience colonic volvulus, a painful and often fatal form of colic. With Morris Animal Foundation funding, Dr. Susan Holcombe and colleagues from Michigan State University found that high blood levels of nonesterified fatty acid and low levels of ionized calcium were associated with increased risk of colonic volvulus in periparturient mares. The team also discovered that gut bacteria change in post-foaling mares just before they develop large colon volvulus. The data indicate that monitoring these factors may help to identify at-risk mares, allowing veterinarians to implement prevention strategies that would result in more favorable outcomes.

For more information: Watch for upcoming results of the equine large colonic volvulus study in the *Equine Veterinary Journal.*