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Research at Penn Vet: It's Everywhere

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SPECIAL ISSUE
research
AT PENN VET

VMD-PhD candidate LaTasha Crawford studies cellular pathways of anxiety to uncover new treatment potentials for animals and humans

ALSO IN THIS ISSUE...

*Laminitis Research Update
Curing Blindness
Arthritis and Canine Hip Dysplasia*

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about the cover:

VMD-PhD student LaTasha Crawford works in her lab at CHOP. Having earned her PhD last year, Dr. Crawford is preparing for a spring VMD graduation.

Research at Penn Vet – It's Everywhere

Dean Joan Hendricks and I hope you enjoy this issue of *Bellwether* which is all about research and the exciting advances that are taking place – everyday – at Penn Vet.

Advances in the biological sciences are occurring so fast it is difficult to keep up with them. Imagine, soon you will be able to get a sequence of your own DNA to make predictions about your future health. It might not be long afterwards that you'll be able to get the same information about your pet.

But in spite of the breathtaking advances in the biological sciences, tremendous challenges remain, and research in veterinary medicine has a unique role to play in meeting those challenges.

For example, today, more than 70 percent of emerging diseases affecting humans come from animals. Although we may not be hearing much in the mainstream press about West Nile Virus or Avian Influenza lately, these diseases have not disappeared, and unless more veterinary research is undertaken to help prevent their spread, they will continue to threaten the health of our livestock, pets and families.

We also face major food shortages for a growing world population, and veterinarians provide the front line of research for the design of efficient and eco-friendly ways to manage livestock that are imminently required to keep up with this increased demand.

Finally, the discoveries made with regard to congenital and spontaneous diseases in companion animals have revealed a substantial similarity with human disease.

Research at Penn Vet is helping to lead the way in meeting these challenges and our basic, translational and clinical researchers provide an effective force to advance both animal and human health.

Because of our leadership role, that we have continued success in obtaining funding for our research, receiving more than \$30 million in funds this last year. These funds come from many sources, including the National Institutes of Health (NIH), allowing scientists to develop and sustain their programs. Indeed, Penn Vet leads all veterinary schools in obtaining investigator-initiated NIH grants. However, as NIH does not fund research unless it is connected to human health, we face an even greater challenge in obtaining funding for purely veterinary medical research, which relies on dollars from foundations, corporations and gifts.

In this issue we are able to give you insight to just a few of the projects Penn Vet researchers are tackling.

On this issue's cover is one of our VMD-PhD combined degree students, LaTasha Crawford. Having earned her PhD, Dr. Crawford is currently working towards finishing up her VMD degree this semester. On page 38, Dr. Crawford writes about her work in the lab at The Children's Hospital of Philadelphia where she focused on the effects of stress on the brain by examining the cellular pathways underlying anxiety. She also writes about how veterinary medicine and biomedical research can synergize in the search for new treatments for both man and beast.

On page 4, you'll read about how Dr. Dottie Brown and Dr. Gail Smith are leading the way in developing new tools that all veterinarians can use in their clinical practices. Both Dr. Brown and Dr. Smith are interested in making the lives of our canine friends less painful and developing outcome assessments that allow better screening and treatment options for their orthopedic patients.

Next, on page 12, you will find a special section on laminitis and the discoveries that have been made at New Bolton Center since the inception of the Laminitis Institute. Of course, this research would not have garnered such worldwide attention if it were not for one of our most famous patients, Barbaro, and here we honor this incredible horse and all of his supporters on his five-year anniversary of winning the Kentucky Derby. This is important research, led by Dr. James Orsini with Dr. Hannah Galantino-Homer serving as the senior lead investigator, that will affect generations of horses to come.

Also in this issue is a feature on the significant milestones that Penn Vet ophthalmology researchers are making in curing two different kinds of blindness, Leber's congenital amaurosis (LCA) and achromatopsia (see page 36). In both cases, Dr. Gus Aguirre and Dr. András Komáromy were able to give sight to dogs that were born blind. Dr. Aguirre's work with Lancelot has led to clinical trials in humans, while Dr. Komáromy's work will presumably follow that same path.

I hope you will enjoy this issue and learning about some of the work that's taking place at Penn Vet. It's an exciting time and I am proud to share with you some of our successes.



—DR. PHILLIP SCOTT
ASSOCIATE DEAN FOR
RESEARCH AT PENN VET

