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DECEMBER 2012

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Opossum or possum?

Veterinary Medical Informatics Laboratory is developing a common vocabulary of terms

by Beth Jones

Pity the cocktail party guest who hits Suzanne Santamaria with the “and-what-do-you-do?” question.

As a veterinary medical terminologist at the Veterinary Medical Informatics Laboratory (VMIL), Santamaria may begin a given workweek pondering how different scientists might describe a *Didelphis virginiana*. She’ll consult reference books, bounce ideas off her peers, ponder some more.

Didelphis virginiana is the scientific name for a Virginia opossum, an animal sometimes also referred to as a North American opossum. Additionally, there can be confusion over the “opossum” vs. “possum” spelling. “All those names can be applied even though it’s the same concept,” Santamaria explains.

Santamaria’s job at VMIL, part of the Virginia-Maryland Regional College of Veterinary Medicine at Virginia Tech, is to help the computer understand that all those names mean the same thing. “So a computer can tell when one lab reports ‘Virginia possum,’ it is the same thing as another lab [that] reports ‘North American possum,’” Santamaria says. “This helps in collating, comparing and analyzing data.”

“We’re trying to make sure that what gets said is



Veterinary Medical Informatics Laboratory director Jeff Wilcke says the lab’s work is “based on the work of every biologist who ever categorized a cricket.”

what is intended,” says Jeff Wilcke, director of VMIL and a professor at the veterinary school.

If this all sounds like an endeavor for the bookish, that’s because it is. But the work also leads to real-world solutions to problems plaguing both pets and people.

Naturally, the projects being completed at VMIL stand to benefit veterinarians in private practice and in research. But the office’s efforts also help the government in detecting outbreaks of disease and even bioterrorism attacks. Clients of VMIL include the Centers for Disease Control and Prevention, the U.S. Food and Drug Administration and the U.S. Department of Agriculture.

Indeed, Joan Knapp, associate branch chief for science at the CDC, describes the work being undertaken at VMIL as nothing short of “absolutely critical.”

A diverse clientele

Much of the work completed at VMIL centers around the Systematized Nomenclature of Medicine-Clinical Terms (SNOMED – CT), a comprehensive, standardized health-care vocabulary system originally created by a group of pathologists. Today, SNOMED – CT is digital, and users can search and manipulate that data.

The team at VMIL works to evaluate terms relating to veterinary medicine in SNOMED – CT and add new concepts related to veterinary medicine.

Because SNOMED – CT is so comprehensive, users can get overwhelmed by its sheer size. To address

that, the staff at VMIL builds subsets of the vocabulary system. For instance, one subset offers the medical concepts used by veterinary clients as well as terminology not common to human medicine. “It makes it more palatable for everybody,” Wilcke says.

If private-practice veterinary offices decide to follow the lead of human health care by creating electronic health records, the veterinarians will likely be consulting with VMIL. “To do it you have to have the terminology we work with,” explains Wilcke.

VMIL also is working with the FDA to help create an electronic labeling system for animal drugs. Labels stored electronically, Santamaria points out, can be quickly edited or updated, which is important since “labels change all the time.”

Another advantage of having medication labels online is they’re then searchable, meaning veterinarians in private practice can search for a medication best suited, for example, for a boxer who weighs 70 pounds and is suffering from pneumonia. “They won’t have to rely on their memory,” Santamaria explains.

Knapp works with VMIL on another project, which will allow laboratories to make testing requests and receive testing results electronically. Again, the goal is to make sure the computer knows what animal the laboratory workers are talking about if they call it by different names. “We have to have a way of making sure we’re talking about the same thing,” says Knapp.

VMIL also provides

standardized terminologies for the National Animal Health Laboratory Network (NAHLN), a network of state and federal animal diagnostic laboratories created so the country will be quicker at spotting emerging diseases and bioterrorist events.

The NAHLN Information Technology System, created with standardized terminology services from VMIL, was designed so that labs across the country could report lab results quickly and accurately.

“It’s all about finding disease when it happens,” says Julie Green, an assistant professor in the Master of Science Veterinary Medical Informatics program at Virginia Tech.

Future of VMIL

Politicians are counting on the creation of electronic health records to trim skyrocketing health costs and improve care. “There are billions of dollars to be saved,” says Wilcke, VMIL’s director. That means taxpayers are footing a lot of the bill for the transformation from paper to electronic medical data, including paying for the work of medical informaticians. “In veterinary medicine we have the same goals, but we don’t have tens of millions of dollars to pay for it,” Wilcke explains.

Building standardized medical terminologies and incorporating their use into computer technology “is an expensive proposition,” says the CDC’s Knapp. “And it’s undervalued because people don’t understand how critical it is. They probably don’t know it exists.”

Even if companies were rushing to finance VMIL,

Wilcke questions the ethics of profiting from creating standardized terminologies. “The fundamental problem of what we do is that it’s based on the work of every biologist who ever categorized a cricket,” Wilcke says. “I don’t own the words. We facilitate their proper use in systems. Nobody should be obligated to pay for words. You have to give it away.”

And yet, VMIL also needs to pay the salaries of its highly trained staff. “The weird part for us is our uncertainties of how are we going to continue to pay for it,” Wilcke says.

Additionally, Wilcke has increasingly felt in recent years that VMIL’s work doesn’t fit into the mission of a research university. “We’re only nominally doing research here,” he says. “By and large what we’re performing for our profession is a service.”

Wilcke believes the solution is for VMIL to become a not-for-profit organization. He hopes to soon produce a business plan to detail what that would look like. Whether Santamaria is working for the university or a not-for-profit organization, it doesn’t sound like she will be changing careers any time soon.

When she worked in private practice right after finishing veterinary school, Santamaria loved going home knowing she was helping animals have better lives. As a veterinary medical terminologist, she feels like she’s making an even bigger impact. “The goal of every vet is to treat animals,” she says, “and the work I do now affects millions of animals and people, too.” **RB**