

Advance

Healthy Animals | Healthy People | Healthy Planet

Improving the health
of animals and people
at home and around
the world.

A newsletter from the Washington State University College of Veterinary Medicine

Fall 2015



College of
Veterinary Medicine

Tracking Animal Disease to Improve Human Health

The Paul G. Allen School
for Global Animal Health



Victoria Olsen-Mikitowicz ('15 DVM), center, spent one month in Kenya where she worked on the population-based animal syndromic surveillance project. Besides earning her DVM, she also earned a professional certificate in Global Animal Health from the Allen School.



Dean Bryan Slinker,
WSU College of
Veterinary Medicine

Milestones: Significant moments in time to take stock, celebrate achievement and history, and then continue to march ahead strongly. There have been many of these recently.

Washington State University celebrates its 125th year in 2015. Your College of Veterinary Medicine is a mere 116 years old—the fifth oldest in the United States. But, because a veterinarian was one of the University's founding three faculty members in 1890, there has always been a veterinarian on the faculty at WSU.

WSU's eight-year capital campaign exceeded its \$1 billion goal. With your help our college raised nearly 15 percent of that, well exceeding our goal of \$133 million, second only to our colleagues in the College of Human, Agricultural, and Natural Resource Sciences among all WSU programs. Our endowment now totals \$44 million, including a much needed growth in scholarship endowment by a little over \$5 million over the eight years of the campaign. We cannot rest on our laurels, however, and the continued generosity and investments of our extended Cougar family will be increasingly important as we aim even higher in our aspirations.

Two years ago, we moved into our newest facility—the Veterinary Biomedical Research Building—capping an incredible growth in our programs and space over the past eight years. For the first time, we have more than 600,000 square feet of assignable space for student education, innovative research, and exemplary service to benefit our friends and stakeholders. We've come a very long way from the few hundred square feet in which our college was founded, a shed tacked onto the Armory in 1895 as authorized by the Washington State legisla-

ture "at a cost not to exceed \$60." This facility served the first graduating class of 1903, just three students. Contrast this to the DVM Class of 2019 that started class in late August that is our largest ever with 137 students enrolled at three campuses across our multi-state partnership, the Washington-Idaho-Montana-Utah (WIMU, pronounced wee-moo) Regional Program. Moreover, we now have our



largest-ever number of undergraduate students. More than 650 undergraduates have chosen this year to pursue four life-science majors that allow them to learn biochemistry, genetics and cell biology, microbiology, or neuroscience and engage in research with outstanding faculty across our college. We are one of only three colleges of veterinary medicine in the country to offer undergraduate degrees, and our growth mirrors the increased enrollment at WSU, including a high proportion of first-generation college students and diverse individuals.

Whew!

Ending on a personal note, I am just wrapping up my seventh year as your dean. My, how time flies. As I take stock, let forth with a big sigh, and revel in the moment, I ask you to do the same—and then get ready to move ahead with me.

Go Cougs!

Dr. Bryan Slinker, Dean
WSU College of Veterinary Medicine

**Advance
Healthy Animals, Healthy
People, Healthy Planet**

**WSU College of
Veterinary Medicine**

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Melle: The true story of a miraculous rescue, a helping hand, an extraordinary surgery, and the love for one dog

A few days after the New Year in 2014, Laurie Boukas of Richland, Washington, was walking her two Border Collies, Lucy and Connor, when she saw a Pontiac Trans Am drive by. Laurie, who had just moved to Richland a few weeks before with her husband, Nick, saw the car turn around and drive by again. On the third pass, Laurie was understandably alarmed. Then the car pulled over.

"I saw this older gentleman waving at me to come to the car," she said. She moved slightly closer when he called out to her. Then the conversation turned curious. "He asked me if I wanted another Border Collie and that he'd found one that has two broken legs."

Two days earlier on January 2, Frank Story and his son, Franklin Jr., were on their way back to Richland from Seattle on Interstate 82 just east of Yakima when they saw a dog running across the highway. Just as Frank was thinking to himself that there was not enough time for the dog to get to the other side, it was struck by a car.

"It was hit at full freeway speed," says Frank.

His son Franklin insisted they stop and look for the dog. They couldn't find her right away, but Franklin did not want to give up. They kept looking and Franklin finally spotted her in a drainage ditch.

They drove her to Dr. Jim Benson ('69 DVM) in the Tri-Cities. Dr. Benson recommended Frank take her to the WSU Veterinary Teaching Hospital. The only trouble was, she didn't have an owner to pay for the care. Frank went to work to find the dog's owner.

"I made several hundred phone calls over several days," says Frank. He made calls around the state to police, animal shelters, humane societies, rescue facilities, radio stations, and newspapers.



Frank Story and Laurie Boukas with Melle

One of the shelters told him that WSU had a program that offered financial assistance to ownerless dogs. Frank applied to the Good Samaritan Fund* and received the good news the next day. "Hearing we got the grant re-energized me," says Frank. "I was very impressed by how quickly they got back to me."

But he was losing hope about finding the owner and felt he'd exhausted all his options. It was then he made the

"We were so impressed with the facility and how we were treated. It is a wonderful school and hospital."

—Laurie Boukas.

decision to stop looking for the dog's original owner and decided to find her a new one. On that lucky day when Frank saw Laurie and her two Border Collies, everything changed.

"I tried to explain the situation to Laurie without alarming her," says Frank. He had a couple of Dr. Benson's business cards and handed one to her. Dr. Benson

just happened to also be Laurie's veterinarian.

Laurie took the card and went to visit the dog at Dr. Benson's office. She fell in love with her immediately. "When I saw her she was so sweet," says Laurie. "Her legs were in splints, she was in pain, but she just kept wagging her tail."

Although they had just made an expensive move from Colorado, Laurie knew they needed to help this dog, even if they couldn't keep her.

"Dr. Sellon came out and greeted us when we arrived in Pullman," she says. And that made them feel right at home. "We were so impressed with the facility and how we were treated. It is a wonderful school and hospital."

Surgery was scheduled for that day, January 8. Over the next couple of months, Laurie made two more trips back to Pullman for follow up appointments after the surgery. Once the bandages were off about eight weeks later, they introduced her to the other dogs. "They all got along beautifully," she says. "I wasn't ready to let go of her."

So they named her Melle, which rhymes with Nellie, and means honey in Greek. Because she was so sweet, she says.

Today, Frank, Laurie, and Melle meet and go for a walk once a week. Frank brings Melle treats. Frank says he cannot conceive of a more loving home than the one Melle is in now.

"The dog is a wonderful miracle that has enriched so many lives," says Frank. But he says that it was the Good Samaritan program that made it all possible.

"The larger miracle is that so many things had to happen and none would have happened without the WSU program," says Frank. "It was a miracle situation every step of the way."

 To learn how you can support the Good Samaritan program and help dogs like Melle, visit www.vetmed.wsu.edu/GoodSam.

*Funds received from the Good Samaritan Fund helped pay for about one-third of Melle's medical expenses.

Tracking Animal Disease to Improve Human Health

The Paul G. Allen School for Global Animal Health

“We have been able to simultaneously monitor health in people and the animals they live with.”

—Thumbi Mwangi, clinical assistant professor in the Paul G. Allen School for Global Animal Health



Community workers measure the height and weight of children from infants to five years old to determine how nutrition from animals, such as eggs and milk that are also rich in protein and micronutrients, is helping reduce childhood stunting due to protein malnutrition.

In rural Kenyan villages where few families have electricity or indoor plumbing, a surprising technology helps researchers study the health of animals and people: the cell phone.

Families who are part of the population-based animal syndromic surveillance project, or PBASS, use their cell phones to call a veterinarian toll free when an animal is sick. More than 70 percent of families participating in the survey have cell phones; only three percent are connected to the electricity grid.

“Mobile telephony is actually very well developed in most of Africa, especially in Kenya,” says Thumbi Mwangi, clinical assistant professor in the Paul G. Allen School for Global Animal Health, who has been collecting data since the survey began in February 2013.

Unlike electricity and water infrastructure, cell phone infrastructure is relatively cheap to build. There is cell network coverage in almost every rural village, and where there isn’t electricity the towers are “off-the-grid” getting their power from diesel generators, says Mwangi. Families who are using firewood to cook or gathering water from streams or Lake Victoria are also going to local shopping centers to charge their energy-efficient phones for a very small fee. One charge could last for many days. And that makes it ideal for communicating with survey families.

Once every two weeks, community interviewers, usually traveling by bicycle, visit the families. During the first year of the study, researchers visited 1,500 households. They collected data on humans such as fever, diarrhea, and respiratory illnesses and similar disease data for animals. For animals, researchers also recorded reproductive illnesses, nervous system illnesses, mastitis, and death. And they collected socioeco-

nomics data for the families including age of family members, household income, and number of children. If an animal gets sick, the families can call the toll free number and a veterinarian will come out within 24 hours so the family doesn’t have to wait until the next scheduled visit.

“One of the big things is that we have been able to simultaneously monitor health in people and the animals they live with,” said Mwangi. “This is not the standard approach in the surveillance of infectious diseases.”

Living with livestock is part of everyday life for these families. It is a source of nutrition, but also a source of income. More than 90 percent of families own some type of livestock. Of those, nearly 90 percent have chickens, more than 50 percent have cattle, roughly 40 percent own goats, and about 20 percent of families have sheep.

“Farm products are the main source of cash for most families,” says Mwangi. “Milk and eggs are a rich source of protein and easy to sell, but if they only have small quantities, families are likely to struggle between eating them or selling them to buy other items.”

From the study researchers have found that families who owned more livestock were also more likely to eat eggs and milk, meaning they are keeping eggs and milk for their families rather than selling it all for other needed items. And that could improve their nutrition.

Victoria Olsen-Mikitowicz (’15 DVM), a student in the Allen School’s Global Animal Health Professional Certificate Program who spent a month in Kenya collecting data, experienced firsthand how animal health affects human health.

“It was easy to visualize the concept of ‘one health,’” says Olsen-Mikutowicz. “Seeing the connection between human, animal, and environmental health, through infections such as malaria, East Coast Fever, and helminths [parasitic worms]—and, all too common, malnutrition.”

As a WSU veterinary student, she has mastered the technical skills, such as analyzing samples or quantifying data, to be a top-notch researcher. But what she learned during her time in Africa was that building relationships with fellow researchers, community interviewers, veterinarians, and community members is key to successful research.

“I learned the importance of developing trust within the community and team to accomplish research,” says Olsen-Mikutowicz. “Because of those relationships, I was better able to collect samples, gather survey information, and help ensure people get the information they need.”

“One of the greatest benefit of this research is that we will be able to determine which animal diseases have the greatest impact on human health and welfare,” says Mwangi. “From there we will be able to conduct intervention studies to reduce disease in animals and improve human health and wellbeing.”

Population-based animal syndromic surveillance and the socioeconomic survey are conducted by the Allen School for Global Animal Health in collaboration with the Kenya Medical Research Institute – Center for Global Health Research, and the Centers for Disease Control.

Newcastle disease is thought to be the main cause of chicken mortality. Future vaccination campaigns against Newcastle are predicted to result in increased survival for chickens, more egg production per household, and access to eggs for children under 5 years of age, which has significant nutritional benefits, says Mwangi.

“There is a strong correlation between cases of human disease and animal disease in the same households,” said Mwangi. “We need to conduct more diagnostic work to know if they are driven by the same pathogens, but the finding shows that surveillance of animal diseases is useful for understanding the health problems of people.”



Measuring upper arm circumference to learn if the child is getting adequate nutrition. The project’s goal is to understand how livestock ownership affects nutritional status in children under five years of age.



➔ *For more information about the Allen School visit www.globalhealth.wsu.edu.*



Lynne Haley,
Senior Director of
Development

A BIG Thank You!

We did it! In its 125th year, Washington State University celebrates the success of our largest fundraising effort to date—the \$1 billion *Campaign for Washington State University: Because the World Needs Big Ideas*.

During this campaign, with the generosity of friends like you, your College of Veterinary Medicine raised \$144,711,409. This has created BIG opportunities for students, BIG investments for faculty and research, and BIG impacts for programs and facilities.

Some examples of things accomplished during the campaign include:

- Creating the Paul G. Allen School for Global Animal Health and building the Paul G. Allen Center for Global Animal Health. As you saw in our cover story, the Allen School is making great strides to improve the health of animals and people around the world.
- Awarding 2,224 scholarships totaling more than \$3.9 million to our DVM students.
- Establishing 72 endowments (a minimum of \$25,000 is needed to establish each endowment). Many of the endowments support our students by providing scholarships. Five of the endowments established during the campaign support the Good Samaritan Fund. As you read on page 3, this program provides funds to animals who are ownerless or whose owners are unable to pay. Melle is just one of many animals helped by this generosity.
- A total of 42,975 gifts were made, with \$41 million coming from alumni.
- Raising \$98.2 million in funds that can be spent immediately to enhance the teaching, research, and outreach programs here at the college. Most of the funds, \$30.7 million, went to support general operations within the college.
- Documenting estate provisions of \$28.4 million. While these funds cannot be used immediately, it is support we know can count on in the future to continue the great work we are doing now.

To everyone who contributed to the *Campaign for WSU*, thank you for empowering BIG ideas and for inspiring tomorrow's Washington State University.

[Awards and Achievements]

Congratulations to Drs. **Patricia Hunt** and **Sue Ritter** who were elected to the Washington State Academy of Sciences for their outstanding scientific records of

achievement and willingness to work on behalf of the academy to bring the best available science to bear on issues within the state. Dr. Hunt, the Meyer Distin-

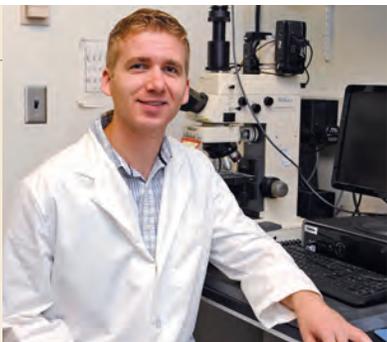
guished Professor in the WSU School of Molecular Sciences, has conducted pioneering research on mammalian chromosome segregation and female oogenesis, providing fundamental insight into the role of environmental exposure in leading to meiotic and chromosomal defects. Dr. Ritter, Regents Professor in the WSU Department of Integrative Physiology and Neuroscience, was selected for her outstanding research on brain control of metabolic function. Her work has refocused efforts to understand blood glucose regulation to the hindbrain, and is providing basic insights into life-threatening medical conditions. They were inducted to the academy during the 8th Annual Meeting at the Seattle Museum of Flight on September 17.



Patricia Hunt



Sue Ritter



Travis Kent will be one of the first students to earn a doctorate through the Students Targeted toward Advanced Research Studies, or STARS.

Your Gifts in Action Reaching for the STARS

When Travis Kent was still a high school student in Boise, Idaho, Washington State University was one of his top choices. But it was on a visit to the WSU School of Molecular Biosciences when he

was told about STARS, a fast-track program where students can begin as undergraduates and earn a doctorate in seven years, when he knew this was the place for him.

"I was excited about getting into the lab early and that shifted my decision to come to WSU," said Kent, who in 2016 will earn a doctoral degree in genetics and cell biology.

With STARS, or Students Targeted toward Advanced Research Studies, students can begin their laboratory training their first year. Each semester and over the summer students receive stipends and the funding allows them to spend time doing their own research, rather than working off campus.

"Without the STARS program, I wouldn't have been able to work in a lab over the summer," said Kent. "I would have been further behind in my research."

Because he had done lab rotations as an undergraduate, by the time he entered graduate school he was able to focus more on research and he was ahead of other graduate students entering the program.

"I've been working in the lab for six years," said Kent. "I feel better prepared for my exams and I was ahead in my coursework as well."

Kent's research is on how abnormal levels of vitamin A, or retinoic acid, can affect fertility in men. A fat soluble vitamin, retinoic acid levels are affected by an individual's metabolism.

"Half of all infertility cases are men," said Kent. "But in about 50% of those cases, they don't know the cause." His research could lead to different advice by doctors who may prescribe vitamin A to treat acne if it could cause infertility later on.

"I'm passionate about reproductive biology," said Kent.

When he finishes graduate school at just 24 years old, he will have many options in front of him.

"Whether I work in academia, government, or for industry, I haven't decided," said Kent. He is currently planning to pursue three to five years of postdoctoral training after he earns his doctorate.

"After that, I am keeping my options open," said Kent.

For more information about supporting the STARS program visit www.smb.wsu.edu/STARS.

*To learn more about how your gift
can make a difference please visit
www.vetmed.wsu.edu/GiftsinAction.*

Look for Gatherings of WSU Alumni, Friends,
and Students at these Upcoming Events!

Mark your calendars

- October 17** College hosts Homecoming BBQ in Pullman (vs. Oregon State)
- October 29-31** Golden and Diamond (50-year and 60-year) graduate reunions in Pullman
- December 7** Alumni reception at the American Association of Equine Practitioners Conference in Las Vegas, Nevada
- March 7** Alumni reception at the Western Veterinary Conference in Las Vegas, Nevada
- April 7** College of Veterinary Medicine Open House in Pullman
- August 8** Alumni reception at the American Veterinary Medical Association Conference in San Antonio, Texas

CE courses at WSU and online are offered year round; visit www.vetmed.wsu.edu/CE for more information.

For more information about upcoming events visit www.vetmed.wsu.edu/Events.