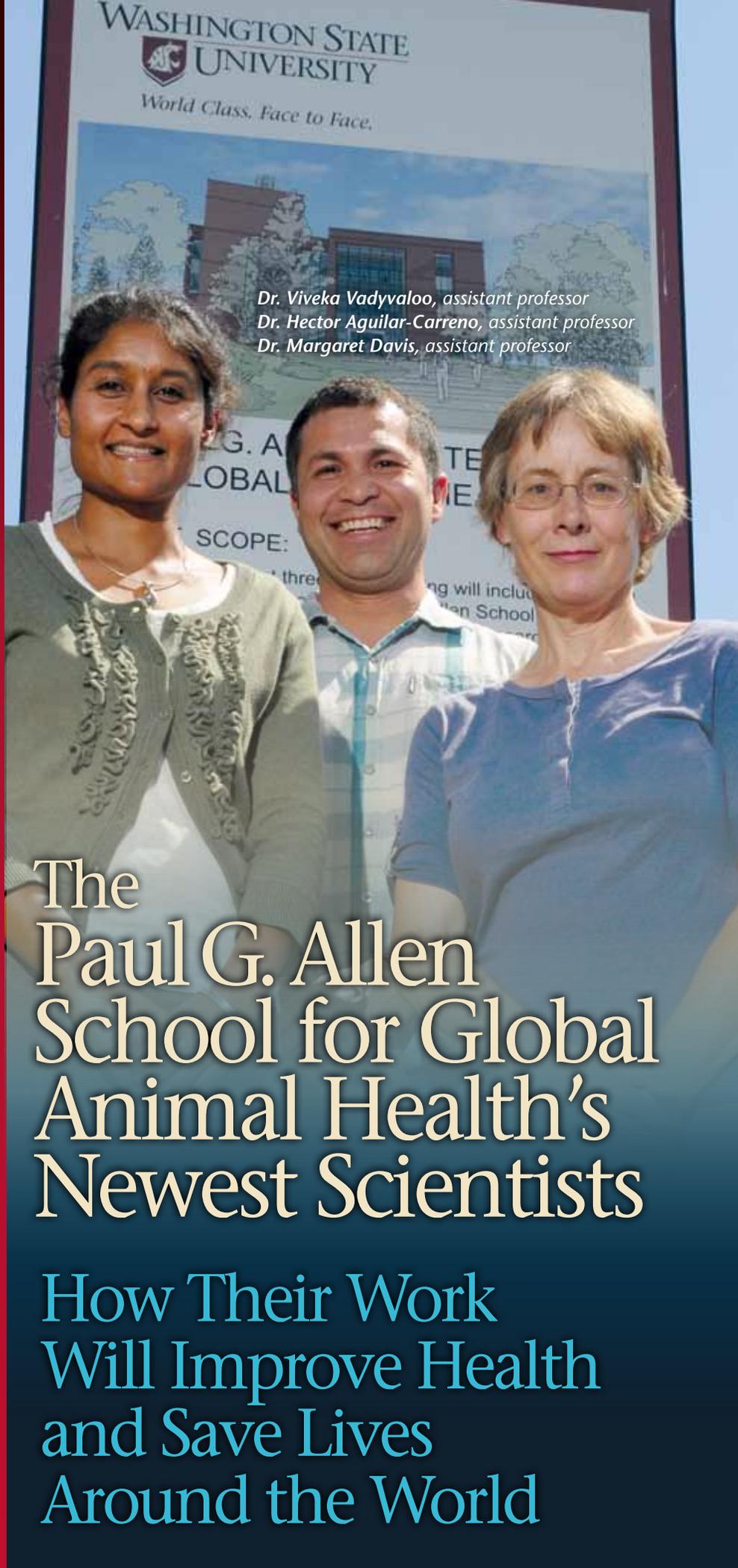




# Veterinary

*executive report*

Fall 2011

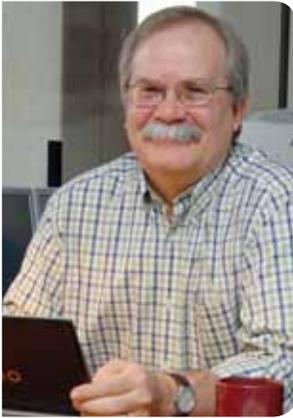


*Dr. Viveka Vadyvaloo, assistant professor  
Dr. Hector Aguilar-Carreno, assistant professor  
Dr. Margaret Davis, assistant professor*

## The Paul G. Allen School for Global Animal Health's Newest Scientists

How Their Work  
Will Improve Health  
and Save Lives  
Around the World

# Message from the Dean



Dean Bryan Slinker  
WSU College of Veterinary Medicine

Only three veterinary medicine colleges in the United States have significant undergraduate education programs as part of their mission. This college is one of them. The others are Colorado State and Texas A&M. We added that mission element about 15 years ago when the faculty in the VCAPP department started an undergraduate neuroscience program. Our involvement then increased markedly last year when the School of Molecular Biosciences joined us. Their mission includes undergraduate programs in genetics and cell biology, biochemistry, and microbiology. Our four excellent life science undergraduate majors are heavily populated by pre-health professions students and those whose goal is to go on to graduate studies in the life and biomedical sciences.

Why does the WSU CVM have this mission? Doesn't the College of Veterinary Medicine exist to educate veterinarians in the DVM professional program? Absolutely. However, as we seek to be an exemplary college and contribute more to the broader success of our University, our engagement in undergraduate education is key. And, fortunately, these goals are not mutually exclusive. In fact, they are highly complementary. Broader engagement in undergraduate education places our mission more centrally within the University, more similar to most other colleges at WSU. We are still different, but we now have a mission element that makes us stand less apart from the other programs. I think this is crucial in our development as a signature program, both within the University and nationally.

More important is the opportunity for creative educational sequencing. Because we can more directly affect the experience of a few hundred undergraduate majors, we can begin to customize the undergraduate experience to feed seamlessly into our graduate programs and professional DVM program. The STARS program in SMB and a complementary program used by neuroscience, as described in this issue, are creative ways to attract and foster the development of exceptionally well-educated young scientists—and reduce their total time to degree. We will now begin to think more broadly about other educational sequencing programs. An example is an undergraduate experience that is shaped to lead seamlessly into a DVM/Ph.D. combined program. Or perhaps we should begin to think creatively how to further modify selected undergraduate experiences to shorten the time to DVM degree for exceptional students. I believe you will see these develop over the next couple of years, and they will play important roles in our greater success.

And, finally, I believe our engagement in these programs is an obligation. This country needs more creativity and engagement to develop programs that enhance our competitiveness in STEM disciplines (science, technology, engineering, and mathematics). With so many drawn to veterinary medicine, why not use our position in society to help attract more young people to pursue science, even if they do not become veterinarians? Far from spreading us thinner, our broader engagement in undergraduate educations enriches all of our other mission elements.

Go Cougs!

Dr. Bryan Slinker, Dean  
WSU College of Veterinary Medicine

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## Molecular Biosciences and Neuroscience Students on the Fast Track

Unlike a lot of high school students, Ross Rowsey, a senior in the School of Molecular Biosciences, and Kathryn Jewett, a graduate student in the Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology, knew they wanted to go to graduate school. So when each learned about the accelerated graduate school programs in the college, they knew it would be the right course for them.

"The accelerated neuroscience program was a good thing for me. I knew I wanted to go to graduate school and I had finished my courses by my junior year," said Kathryn Jewett, who began as a neuroscience undergraduate in the College of Veterinary Medicine. "Taking the required graduate classes early cut a year off my school time."

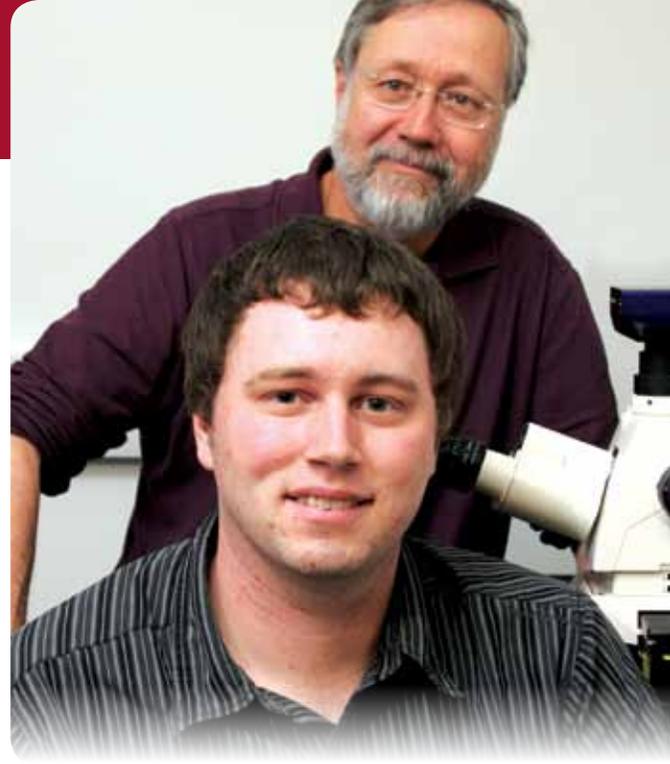
Now in her third year of graduate school, Jewett is conducting research in the Krueger sleep lab at WSU Spokane and plans to finish her doctorate in the next two years.

Ross Rowsey started in the Students Targeted toward Advanced Research Studies (STARS) program in the School of Molecular Biosciences as a freshman.

"The STARS program has been perfect for me," said Rowsey, who was admitted to the program right out of high school. "I like the accelerated pace. It keeps me interested and I've been able to start on my research sooner."

Rowsey's research interests are in reproductive biology and how maternal age affects abnormalities. He is working to better understand how age influences the number of abnormal chromosomes. Rowsey will be one of the first graduates of the STARS program when he finishes his doctorate in 2015.

Since the STARS program began four years ago, students have been recognized by the Barry M. Goldwater Scholarship and Excellence in Education Program in science and engineering, published scholarly papers, and finished their undergraduate degrees a full semester ahead of schedule.



**"The STARS program has been an extremely enjoyable and beneficial experience for me. With early integration into the laboratory setting and lab work starting my freshman year, I am truly ahead of the curve compared to my peers."**

—Ross Rowsey, STARS student in the School of Molecular Biosciences

To learn more about the STARS program please visit [www.smb.wsu.edu/STARS](http://www.smb.wsu.edu/STARS). To learn more about the neuroscience program in the Department of Veterinary and Comparative Anatomy, Pharmacology, and Physiology, visit [www.vetmed.wsu.edu/Neuroscience](http://www.vetmed.wsu.edu/Neuroscience).

## The CVM was on NBC!

NBC's *Today Show* sent a crew to Pullman on Saturday, July 30, to feature Gamera, a 12-year-old African spur-thighed tortoise that recently had its left front leg amputated and had a swiveling wheel attached to his shell.

A burn and subsequent infection necessitated the amputation and WSU veterinarians Drs. Nickol Finch and Courtney Watkins followed up by placing a prosthetic caster on the animal's shell. Gamera took to his new prosthetic quickly with little encouragement and ambulates well on most surfaces.

The surgery and compelling story, coupled with social media's reach, resulted in one of the biggest stories in WSU's history.

To read more about Gamera, visit [www.vetmed.wsu.edu/Gamera](http://www.vetmed.wsu.edu/Gamera).



# The Paul G. Allen School for Global Animal Health's Newest Scientists

## How Their Work Will Improve Health and Save Lives Around the World

Last month the Hollywood movie *Contagion* showed the fear, devastation, and social chaos caused by a fast-spreading, airborne virus for which there is no cure. While the pandemic in the film is fictional, the newly emerging disease—Nipah virus—is not.

“Nipah is the most deadly virus in the *Paramyxoviridae* family,” said Dr. Hector Aguilar-Carreno, assistant professor and one of the newest scientists in the Paul G. Allen School for Global Animal Health. “There is about a 40–75 percent death rate in humans from encephalitis within 9 to 14 days after exposure to the virus.”

Nipah virus was first discovered in 1999 in Malaysia and Singapore, where it spread rapidly to animals and humans. In that first outbreak alone, more than one million pigs died. It is estimated to have killed over 200 people to date.

“The virus is transmitted through saliva or airborne through a cough,” said Dr. Aguilar-Carreno. “Pigs, for example, who often survive the virus, can cough and spread the virus to humans.”

Fruit bats are the virus's main natural host—they carry the virus, but do not become ill. And, because they migrate long distances, infected fruit bats can spread the virus globally.

With such a nasty disease, Dr. Aguilar-Carreno is quick to explain that at WSU they do not work with the live virus. “At WSU we try to understand the individual proteins in the virus,” said Dr. Aguilar-Carreno. “Our goal is to find a way to block the virus from entering the cells to reduce transmission and increase chances of survival.”

While Dr. Aguilar-Carreno studies newly emerging viruses, Dr. Viveka Vadyvaloo, assistant professor in the Allen School, studies an infectious disease that is centuries old. In 14th century Europe, millions of people died from an unknown disease for which there was no cure. And no one knew how it was spreading. The Plague, sometimes called the Black Death, could decimate an entire village, and it changed the social and economic structure of the continent. While the plague may seem like a disease of the distant past, it continues to be a public health issue even in the United States, particularly in the rural southwest.

“We've actually seen an increase in the number of cases of plague worldwide over the last 50 years,” said Dr. Vadyvaloo. “Madagascar, for instance, has an active plague focus and many human plague infection cases. Overall there is an increasing incidence of human plague cases in parts of Africa consistent with re-emergence of the disease.”

Spread by fleas, the bacterium *Yersinia pestis* is responsible for millions of deaths worldwide spanning centuries. The Oriental rat flea is the prototype carrier, or vector, and learning how the bacteria survive in the flea and is transmitted is what Dr. Vadyvaloo and her team are studying.

**“Disease doesn't recognize borders.”**

—Dr. Guy Palmer, director of the  
Paul G. Allen School for Global Animal Health



Students and scientists in Dr. Hector Aguilar-Carreno's lab study the Nipah virus, a newly emerging global disease.

"The bacteria form a biofilm in the flea's gut," explains Dr. Vadyvaloo. The biofilm, a thick, sticky mass, fills the flea's stomach and blocks the blood from passing into the flea's gut. The blocked, starving flea will repeatedly bite its rodent or human host, creating more opportunities for infection by regurgitating blood containing bacteria dislodged from the biofilm into the bite site.

"You only need five bacteria to enter your body to result in death within 48 hours," said Dr. Vadyvaloo.

By understanding the basic science of how the bacteria form the biofilm in the flea, researchers will be able to apply that work to creating solutions to reduce transmission.

"Our work could possibly lead to something as seemingly simple as a cream applied like a repellent that would prevent the biofilm from being created in the flea's stomach," said Dr. Vadyvaloo.

Diseases such as Nipah virus and the plague are a critical threat to global health and economies, yet some of the most devastating illnesses are those that families in developing countries live with everyday.

According to the World Health Organization, diarrheal disease is the leading cause of malnutrition and the second leading cause of death in children under 5 years old. Although it is preventable and treatable, it kills 1.5 million children every year.



Angie Hinz, scientific assistant to Dr. Vadyvaloo, is collecting fleas from one of the flea colonies.



Dr. Terry McElwain with children in Masaka, Uganda. Better laboratory quality is critical for developing countries to detect outbreaks early, before disease becomes widespread.

Dr. Margaret Davis, assistant professor hired in the Allen School this past summer, studies disease from bacteria, such as *Salmonella*, that cause diarrhea. She identifies antibiotic-resistant salmonella strains that have the same genetic fingerprint, or profile, and are shared between humans and cattle. She has found that people who carry certain strains are also more likely to have come in direct contact with livestock, such as those working on a dairy farm.

"So different ways people interact with animals may explain how bacteria are transmitted, and not just transmission through food," said Dr. Davis. "How people interact with their animals impacts human health."

Although to date most of her research has been in the United States, she plans to collaborate with researchers in developing countries where there are often fewer restrictions on antibiotic use.

"Knowledge is a protective factor," said Dr. Davis. "If we can demonstrate how animals transmit disease, it can lead to better health education and changes in animal management to reduce transmission."

In the upcoming year, a clinical microbiologist with an appointment in the Allen School will be hired to expand the clinical laboratory training program, including quality management training. The ultimate goal is to provide lab quality training to scientists in developing countries, who can then take that knowledge back and train others.

"The first thing a lab needs is a good quality management system," said Dr. Terry McElwain, professor and executive director of the Washington Animal Disease Diagnostic Laboratory at WSU. "Adequate laboratory infrastructure is critical for disease surveillance so outbreaks can be detected early."

"Disease doesn't recognize borders," said Dr. Guy Palmer, director of the Allen School. "Dr. McElwain will be taking his expertise and making it global."

**To learn more about the Paul G. Allen School for Global Animal Health, visit [www.globalhealth.wsu.edu](http://www.globalhealth.wsu.edu).**

# From the Office of Development and External Relations



*Dr. Richard DeBowes, associate dean of Veterinary Development and External Relations*

On occasion, alumni will ask how they can support the WSU College of Veterinary Medicine. The question often comes from folks who are several years beyond graduation, well established in their lives and businesses, and reflecting on how they came to enjoy such success in their chosen profession. Many of them recognize that WSU was a key element in their

success and want to give back.

Although there are many ways alumni can give back to the College of Veterinary Medicine (including scholarship support and contributing to the Fund for Veterinary Medical Education Innovation, the Dean's Margin of Excellence Fund, or any of a host of special programs such as the Paul G. Allen School for Global Animal Health), the 1961 CVM class reunion this summer reminded me of the power of numbers.

The amazing Class of 1961 has collectively committed to supporting the college and honoring their past through the creation of the Class of 1961 Professionalism Endowment. Twenty-four of these special colleagues (along with their spouses and guests) who graduated on May 28, 1961, in a class of 43 students, have collectively donated \$37,000 to endow a scholarship to reward the demonstration of professional behavior in future colleagues. The income paid on that endowment allows for a Class of 1961 Award to be given annually to a deserving third-year veterinary student selected by a vote of their classmates.

The Class of 1961 is special indeed. The careers of these incredible folks stretch to every corner of our profession—from practice to industry, research to government and academia. Alumni from the Class of 1961 have been active in the profession and held positions as officers in professional associations and on civic boards. Two have served as deans of veterinary colleges. This incredible group of veterinarians remained in contact through the years and is extremely close. It was against this backdrop of accomplishment and citizenship that they chose to honor their college and former classmates by creating this wonderful gift of support.

The commitment, caring, and vision of the Class of 1961 is exemplary and, frankly, not unusual of what we find in Cougar veterinarians around the globe. What is a bit unique is their passion and call to action to honor their past and support the profession's future.

At their 50th class reunion this past June, the '61 graduates celebrated with a number of former CVM faculty, classmates' widows, friends, and Nicholas John Paulson (Class of 2012), the recipient of the first Class of 1961 Professionalism Award. It was a truly wonderful experience to have these incredible folks back on campus.

We can all learn from those who have gone before us. The Class of 1961 has given us an incredible example of how we can all play a role to build on a vision of strength and excellence for our alma mater and its future. You, too, as an individual or collectively with your classmates, can make a huge difference at WSU. Please consider how you can follow their lead.

Go Cougs!

*Class of 1961 at their 50th reunion in Pullman, June 2011, left to right: Front: Ken Kellogg, Tom Kelly, Bob Darlington, Bill Baldwin, Bill Berry, and Tom Migaki. Middle: Jim Murphy, Dave Anderson, Bill Moffat, Greg Nelson, Ray Ediger, and Gary Duskin. Back: Ed Kearley, Ray Johnston, Rich Guthrie, Jim Lebo, Ken MacRae, Paul Bissonette, Bob Haskell, Bob Wilson, and Mel Dennis.*



*Nicholas Paulson ('12 DVM) receiving the first Class of 1961 Professionalism Award from Dr. Robert Wilson ('61 DVM), former dean of the college.*

To learn more, visit  
[www.vetmed.wsu.edu/  
Classof61](http://www.vetmed.wsu.edu/Classof61)

# Awards and Achievements



**Terry Hassold**, professor in the School of Molecular Biosciences, received a MERIT Award from the National Institute of Child Health and Human Development.

The MERIT Award extends funding for “A Program of Research in Population Cytogenetics” to 2015 with the opportunity to extend it for two to five additional years. This program of research was originally started by Patricia Jacobs in 1975. Dr. Hassold took over the program in 1988. It has been continuously funded for the last 36 years.



**Philip Mixter**, clinical associate professor in the School of Molecular Biosciences, is one of 13 biologists nationwide selected to participate in the inaugural Assessment Residency of

the American Society for Microbiology (ASM)/ National Science Foundation (NSF) Biology Scholars Program. The Biology Scholars Program is a national leadership initiative that seeks to improve undergraduate biology education based on evidence of student learning. The yearlong Assessment Residency offers scholars an opportunity to increase their understanding and use of assessment tools, practices, and data analysis.



**Ahmed Tibary**, professor in the Department of Veterinary Clinical Sciences, has been named the 2011 Theriogenologist of the Year by the American College of Theriogenology

at the combined Society for Theriogenology/ACT annual conference.



## Your Gifts in Action

**Radiology Receives \$90,000 of equipment from Esaote Europe**

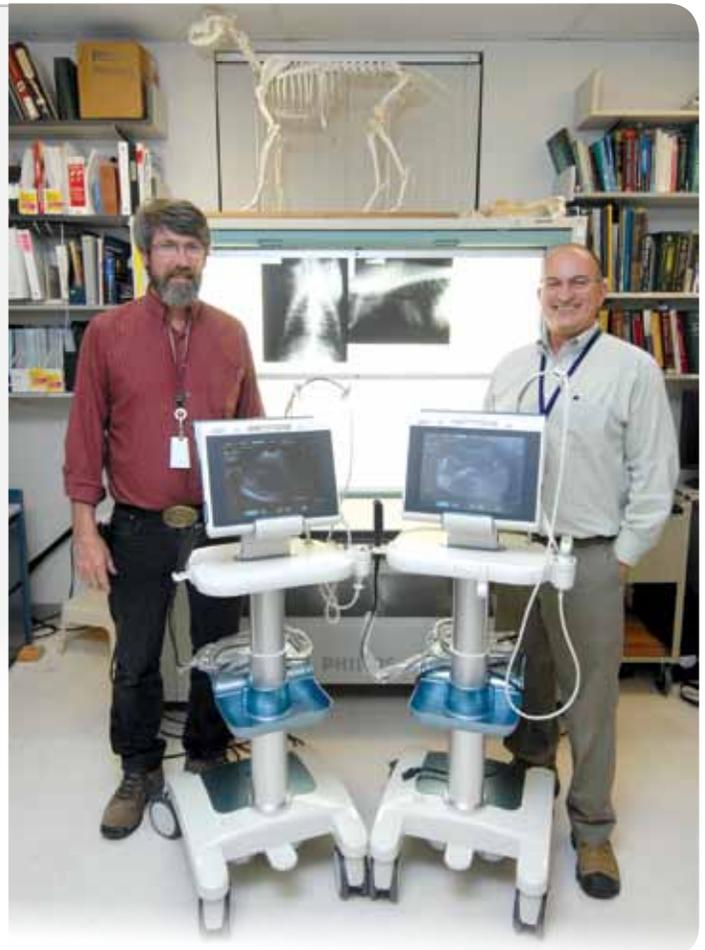
Radiology Services has two new portable ultrasound machines thanks to Esaote Europe, maker of the MyLab One ultrasound. The versatile machines are being used to train veterinary students in small

and large animal imaging techniques. Students can perform imaging on the abdomen, heart, equine and food animal reproductive systems, and equine musculoskeletal systems.

Drs. John Mattoon and Greg Roberts have been working jointly with Calin Marian of Esaote Netherlands to develop a tutorial for normal equine tendon and ligament ultrasonography as part of the portable ultrasound machine software package. The program was designed to educate equine practitioners and students. The tutorial package has recently been released as part of the MyLab One portable ultrasound software package, which is distributed worldwide.

“These machines are truly portable and versatile,” said Professor John Mattoon, a board certified veterinary radiologist and chief of WSU’s diagnostic imaging section. “We will be able to provide the most up-to-date ultrasound training to our veterinary students.”

To learn more about how your gift can make a difference please visit [www.vetmed.wsu.edu/GiftsinAction](http://www.vetmed.wsu.edu/GiftsinAction)



Drs. Greg Roberts (left) and John Mattoon with the new MyLab One ultrasound machines.

Henry Moore Jr. of the WSU CVM Biomedical Communications Unit took the above photo and all the photos for the ultrasound training tutorial package.



Look for a WSU Alumni, Friends, and Students Gathering  
at these Upcoming Events!

## Mark your calendars

### Important dates to remember:

- November 7–8** Animal scientist Temple Grandin, Ph.D., will visit the college. Her life has been featured in an HBO film titled *Temple Grandin*, starring Claire Danes. [www.grandin.com](http://www.grandin.com)
- November 20** Alumni reception at American Association of Equine Practitioners in San Antonio, Texas
- February 20** Alumni reception at the Western Veterinary Conference, Las Vegas, Nevada
- April 14** Veterinary Teaching Hospital Open House in Pullman
- April 25–26** Golden and Diamond Grad Reunions in Pullman

CE courses at WSU and online are offered year round; visit [www.vetmed.wsu.edu/CE](http://www.vetmed.wsu.edu/CE) for more information.

For more information about upcoming events visit [www.vetmed.wsu.edu/Events](http://www.vetmed.wsu.edu/Events).