Advance

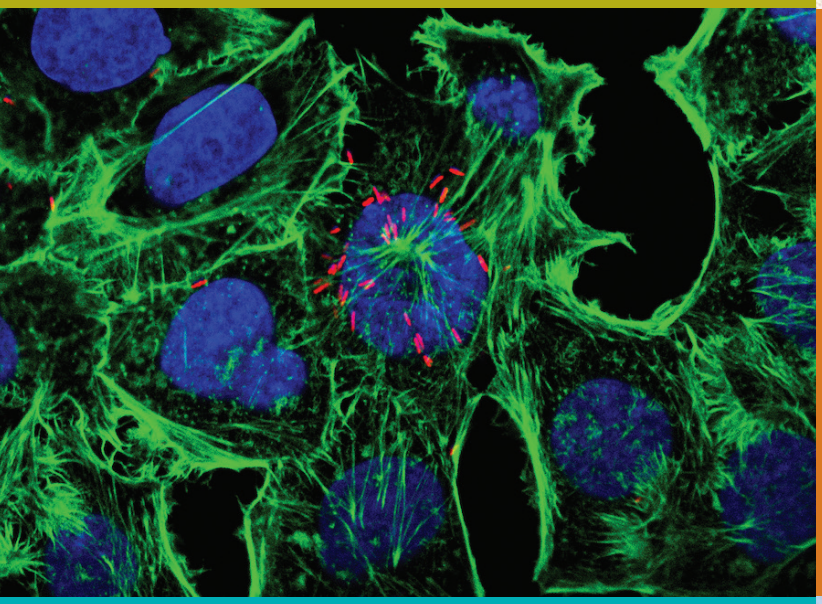
2015–2016
Annual Report

A special edition of the *Advance* newsletter

Winter 2017

Healthy Animals

WSU Provost Dan Bernardo brings "Willie," an eight-year-old English Springer Spaniel to the WSU Veterinary Teaching Hospital for a wellness visit.



Healthy People

Campylobacter jejuni *bacteria (red) binding to host cells (cell nuclei are blue, cell microfilaments are green). Researchers in the School of Molecular Biosciences are studying how* C. jejuni, *the most common bacterial cause of human food poisoning in the world, bind to the host cells in the intestine.*

Healthy Planet

Children receiving deworming medication in Tanzania. Felix Lankester, clinical assistant professor in the Allen School, paired the already successful dog rabies vaccination program with worming treatment for nomadic Maasai children who would otherwise be missed by the school-based national control programs.

[Message from the Dean]

Dean Bryan Slinker, WSU College of Veterinary Medicine

As we begin another fantastic year in the life of your College of Veterinary Medicine and I reflect back, there is so much to be grateful for. And much of that is the generosity of the many of you who give back to us in so many ways.

We are nearing the completion of our More Than a Machine campaign for our much-needed new MRI and just a few more gifts would put us over the top to keep this essential advanced imaging technology up and running to provide unparalleled care to our patients. Among others, we have also received numerous gifts to enhance our veterinary educational program, including several to support our growing Clinical Simulation Center (see www.vetmed.wsu.edu/SimLab) with much-needed equipment.

Importantly, our grass-roots campaign to enable us to lead the charge to eliminate rabies as a public health problem through our programs of intervention and research (see, for example, the article in this issue on page 3 about our recent research regarding thermostable rabies vaccines). We now have six clinics enrolled in our campaign that provide financial support, and 21 clinics that actively promote the WSU Rabies Vaccination program (www.eliminaterabies.wsu.edu). And more are joining our efforts each month. My goal is to have every veterinary practice in the state of Washington enrolled in this noble cause to eliminate rabies as a public health problem (you may remember that more than 59,000 people each year die of rabies around the world, mostly in sub-Saharan Africa and South Asia). We will also invite clinics from Idaho, Montana, and Utah, our WIMU program partners, and the rest of the country to join this noble effort. We know how to prevent the suffering and death due to rabies in our domestic animals—it is a matter of logistics and funding to marshal the response needed to make it happen.

Also, when I talk with our great veterinary students, I am always reminded that much of what makes us special—a real family in a way not all veterinary schools can match—is because of the engagement of so many who give not just of their money, but also their time. For example, our preceptors, the many who volunteer as communication coaches, and the many who give their time to our Diagnostic Challenges in the fall of the second year of our curriculum. None of this would be possible without the engagement of our broader family: alumni, families of our students, staff, faculty, and the many others in our extended family who care about animals. We are blessed with a commitment to our program that makes a real difference for our students on their way to becoming excellent veterinarians.

This is also a time of year to look forward, forward to the many opportunities a new College of Medicine will bring to us for collaboration, to moving ahead with our new WSU president, Kirk Schulz, to foster a broad identity in One Health, and to continue our strategic thrusts in individualized medicine, antimicrobial resistance, functional genomics of livestock, and many more. We have welcomed new faculty and said goodbye to some long-time stalwarts. Thanks to all of those dedicated to our success. The future looks great from my perch.
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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Advance is published three times a year by the College of Veterinary Medicine at Washington State University.
Issue # 32

1/17 155302

Rabies Vaccine Found Effective Even After Warm Storage

by Marcia Hill Gossard '99, '04

Felix Lankester, left, WSU clinical assistant professor, takes a blood sample to test whether a rabies vaccine stored at warmer temperatures is effective against the disease.

A Washington State University-led research team determined rabies vaccines stored at warmer temperatures still protect against the disease in dogs.

The work, published in the journal *Vaccine*, could lead to improved vaccination coverage in hard to reach, rural areas in Africa and Asia where electricity for cooling is limited.

"Thermotolerant vaccines were a really important feature of the campaign to eliminate smallpox," said Felix Lankester, lead author and clinical assistant professor in the WSU Paul G. Allen School for Global Animal Health. "We hope it will have the same effect for eradicating rabies."

Recommendations by the World Health Organization are for vaccines to be transported and stored in a "cold chain" at between 2°C (35.6°F) and 8°C (46.4°F). Lankester and his colleagues found that Nobivac, a commonly used rabies vaccine, produces the same level of protective antibodies in dogs after being stored for six months at 25°C (77°F) and for three months at 30°C (86°F).

"The ability to distribute vaccines widely outside the cold chain will allow for more consistent coverage across communities," said Lankester. "It could be a quantum shift in how vaccines are delivered."

ERADICATING ONE OF THE DEADLIEST DISEASES

"Human rabies from dog bites has the highest fatality rate of any human infectious disease," said Guy Palmer, WSU's senior director of global health. "But rabies is easily preventable with regular dog vaccinations."

Each year roughly 60,000 people, mostly children, die from rabies. Globally, more than 99 percent of human rabies deaths are caused by dog bites—almost all in sub-Saharan Africa and Asia.

Millions of people are saved by costly post-exposure prophylaxis—a series of post-bite vaccinations, the first of which must be administered within the first 24 hours after a person is bitten by a rabid dog. But once symptoms appear, the disease is fatal.

Vaccinating 70 percent of the dog population will protect humans and wildlife, such as endangered African wild dogs, from the disease.

WSU, in collaboration with the Serengeti Health Initiative, has been working to control rabies in areas of northern Tanzania through annual mass dog rabies vaccination campaigns. But rabies continues to be prevalent, in part because of the challenges of transporting vaccines to remote areas where vulnerable people live in resource-poor communities.

"If a team-led vaccination campaign misses a village because it is very far or because rain washed out a bridge, then there will be pockets where vaccination coverage is low," said Lankester. "With a community-led initiative, we are hopeful we would improve the coverage levels."

EMPOWERING COMMUNITIES TO LEAD VACCINATION PROGRAMS

Mass vaccination teams generally only visit communities once a year, if they can get there at all. When new dogs are born or move into the community, the level of protection against rabies drops. In community-led programs, thermotolerant vaccines could be stored in the community where local coordinators would vaccinate the entire dog population.

"Through community-led programs, coverage could be kept relatively consistently high, which would reduce the likelihood of rabies returning to a community," said Lankester. "These findings also give confidence to those working to control rabies that if vaccines are kept outside of the cold chain for a small time, they don't have to be thrown away."

In the next phase of the research, Lankester and his colleagues will test the effectiveness of using low-tech cooling options for storing rabies vaccines in rural communities.

Annual Report 2015–2016

The WSU fiscal year began July 1, 2015, and ended June 30, 2016.

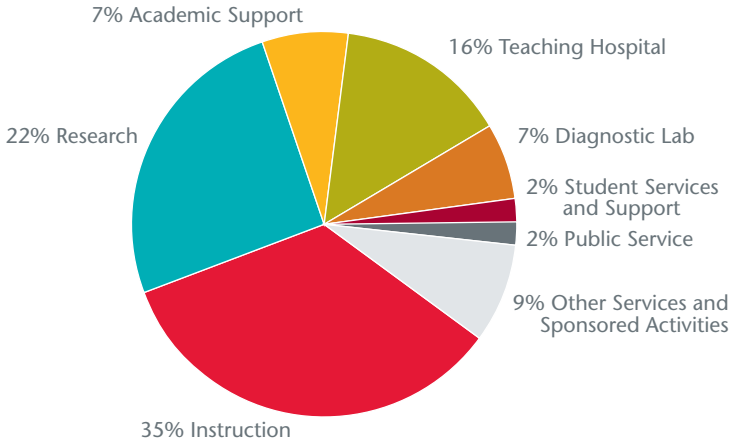
Revenue and Expenditures

Today, only about one-third of college revenue comes from state appropriations, including tuition. The remainder comes from sources such as grants, services, and philanthropic giving. As state funding continues to decline, the college will increasingly rely on charitable giving from corporations, foundations, and alumni and friends to maintain a margin of excellence in teaching, research, and patient care.

FY 2015–16 Expenditures (college wide)*

Instruction	$ 28,818,434
Research	18,384,182
Academic Support	6,194,410
Teaching Hospital	13,269,684
Diagnostic Lab	5,536,860
Student Services and Support	1,982,792
Public Service	1,323,457
Other Services and Sponsored Activities	7,482,159
Total	**$ 82,991,978**

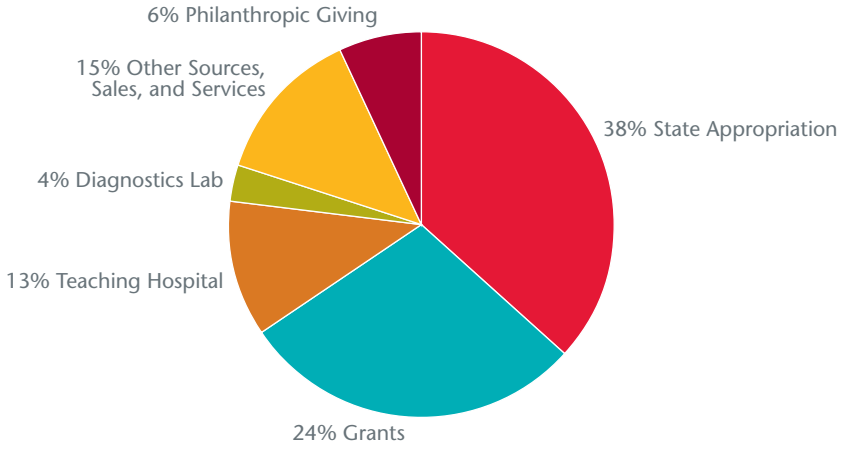
**Expenditures include charges against carry-forward balances that are not reflected in current year revenue figures*



FY 2015–16 Revenue (college wide)

State Appropriation*	$ 31,225,983
Grants	19,664,340
Teaching Hospital	10,464,818
Diagnostics Lab	3,065,760
Other Sources, Sales, and Services	12,877,798
Philanthropic Giving	4,879,464
Total	**$ 82,178,164**

**State Appropriation includes tuition.*



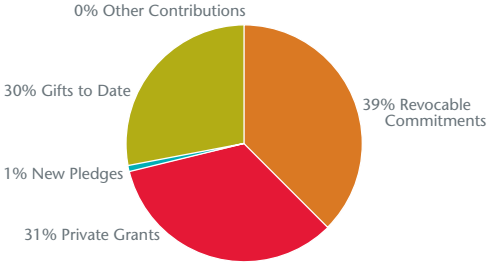
Giving

Thirty percent of gifts in 2015–16 were immediately available to be used by the college to support programs, teaching, and research. Many gifts also come in the form of pledges or revocable commitments—funds the college cannot use until sometime in the future. For instance, 39 percent of giving last year came as revocable commitments such as a revocable living trust. Trusts such as these can be managed and changed by the donor with the remaining estate funds eventually going to the college.

The 2015–16 fundraising goal was $7.7 million. Through generous gifts and private grants, the college received more than $16.1 million dollars—exceeding our total goal by 110 percent. More than $4 million of those gifts were in immediately usable funds that could be put to work right away to support our students, patients, and faculty. The college also received close to $30,000 in new pledges and more than $6.3 million in revocable commitments.

Types of Giving FY 2015–16

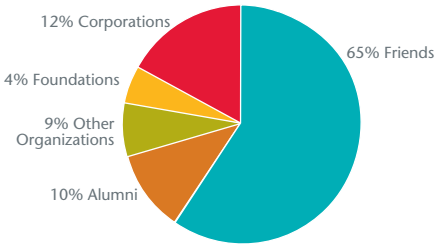
Gifts	$ 4,804,875
New Pledges	29,562
Revocable Commitments	6,372,405
Private Grants	4,959,837
Other Contributions	0
Total	**$ 16,166,679**



Donors to the College FY 2015–16

WSU Alumni	$ 3,170,250*
Friends of the College	3,451,998
Corporations	412,983
Foundations	152,235
Other Organizations	340,746
Total	**$ 4,804,875**

**Total includes a $1.2 million gift from WSU alumnus, Paul G. Allen, to support the Paul G. Allen School for Global Animal Health. Amount has been removed from the pie chart.*



You Make the Difference

Ninety percent of gifts to the college came from friends, corporations, foundations, or other organizations while 10 percent came from alumni in 2015–16.

New Benefactors and Laureates in 2015–16

Silver Laureates
($1,000,000 to $4,999,999)
Don J. Finsen

Benefactors
($100,000 to $499,999)
LeeAndra "Lee" Bates

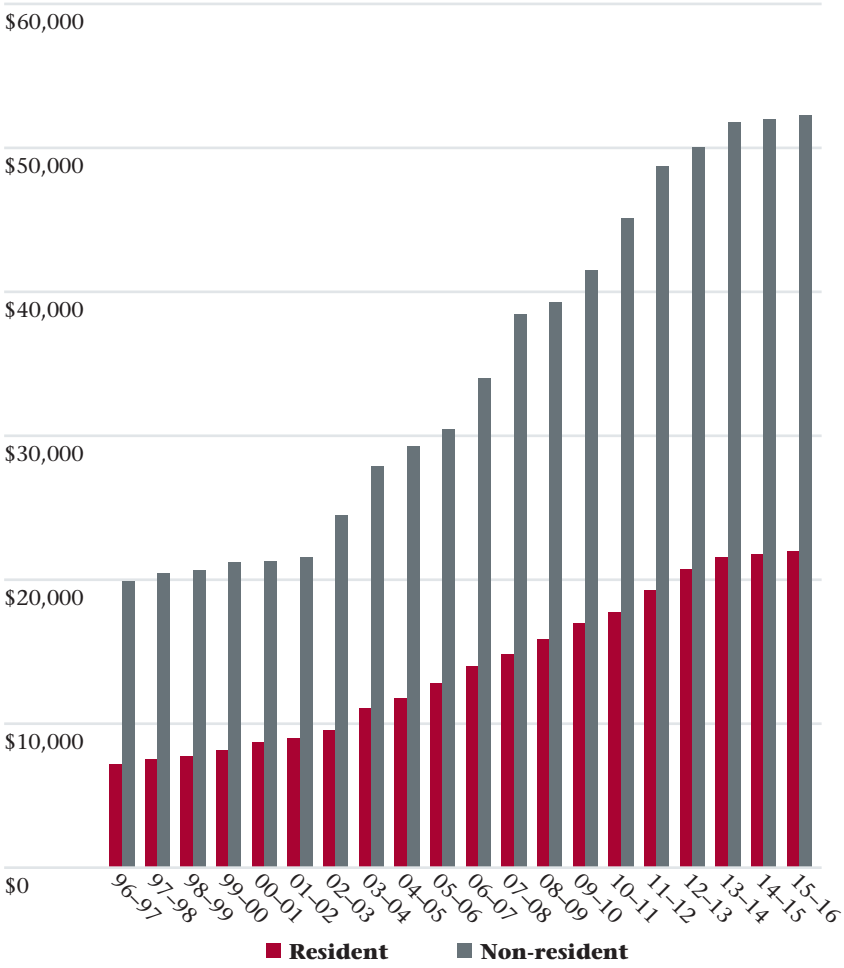
College of Veterinary Medicine DVM Class of 1961

Bertie (Bert) Schumacher

Tuition

Tuition for residents and nonresidents has **nearly tripled** since 1996 for veterinary students. In fiscal year 2015–16, resident students paid $22,390 each year while nonresidents paid $53,444. After rising sharply for nearly a decade, tuition rates leveled the last four years. But high tuitions mean many veterinary students graduate with large debt. Student scholarships can help defray some of the costs of education, putting our students in a more competitive position as they start their careers.

Academic Year	Resident	Non-resident
1996–97	$ 8,064	$20,476
1997–98	$ 8,390	$21,302
1998–99	$ 8,724	$22,152
1999–00	$ 8,988	$22,162
2000–01	$ 9,254	$22,938
2001–02	$ 9,872	$24,482
2002–03	$11,056	$27,420
2003–04	$11,846	$29,278
2004–05	$12,654	$31,212
2005–06	$13,776	$34,004
2006–07	$15,003	$37,052
2007–08	$16,044	$39,636
2008–09	$17,156	$42,400
2009–10	$18,332	$45,342
2010–11	$19,578	$48,480
2011–12	$20,914	$50,878
2012–13	$22,342	$53,396
2013–14	$22,352	$53,406
2014–15	$22,374	$53,428
2015–16	$22,390	$53,444
Percent change from 1996–97 to 2015–16	**178%**	**161%**



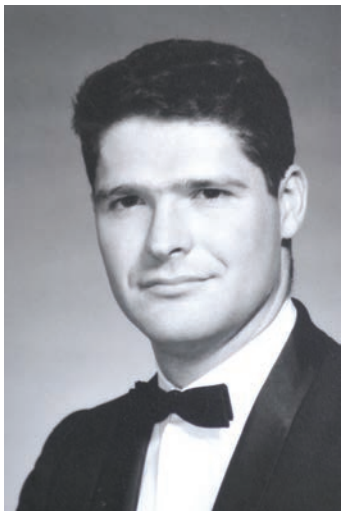
[From the Office of Development and External Relations]

Lynne Haley,
Senior Director of Development

As you read on page 3 of this issue, researchers in the WSU Paul G. Allen School for Global Animal Health are doing exciting research to help ensure that no one dies from canine rabies. This important work that will save thousands of lives each year could not be done without the generous support from donors like WSU alumni Don and Dori Ferrel. For more than two decades, Don ('69 BS Physics) and Dori ('69 BA Education) have been committed to improving the health of animals and people through their donations to Washington State University.

In 1993, donations from the Ferrels, along with donations from other family members, friends, and colleagues, established the Donald R. Weldin, DVM Research Endowment to memorialize Dori's brother who died in a skiing accident when he was just 38 years old. Dr. Weldin ('69 DVM), a dedicated and greatly respected veterinarian in Walnut Creek, California, was a skilled surgeon and was loved by his clients. Because of his deep commitment to his patients, Dr. Weldin slept on the floor of his veterinary practice one Christmas to see that a seriously ill dog made it through the night.

Since the first award given in 1996, funds from the Weldin Endowment have supported many types of research to benefit animals and humans. In the past three years alone, funds from this endowment have supported research for some of the most pressing health problems including drug therapy research for skin cancer, understanding the underlying causes of obesity, and learning more about what causes heart disease. This year, the Ferrels gave additional funds to support this research endowment.



Donald R. Weldin ('69 DVM)

The Ferrels also supported the Allen School's rabies research (mentioned earlier) to help ensure vaccines can reach the villages that need them most. Their generous donation will be used by Dr. Felix Lankester's research team to test low-tech cooling storage methods for rabies vaccines in remote rural areas. Many villages do not have reliable sources of electricity. By testing the low-tech cooling methods that are most effective for vaccine storage, it means that many more dogs could receive the vaccine.

We at the college are grateful to donors like the Ferrels, and to all of our supporters. You make a difference in improving the health of animals and people at home and around the world.

[Awards and Achievements]

Steve Hines received the 2016 WSU Faculty Member of the Year Award presented at the Pacific Northwest Veterinary Conference banquet and award ceremony in October 2016. Dr. Hines is a professor in the department of Veterinary Microbiology and Pathology and has dedicated his life to improve the learning and overall experience for veterinary students at WSU.

Kelly Brayton, a professor of microbial genomics in the Department of Veterinary Microbiology and Pathology and in the Paul G. Allen School for Global Animal Health, has been elected as Fellow of the American Association for the Advancement of Science (AAAS). Fellows are elected by their AAAS peers because of their scientifically or socially distinguished efforts to advance science or its applications.

Congratulations to **Katrina Mealey** who was named a fellow of National Academy of Inventors. Dr. Mealey is being honored for her invention of a genetic test that detects the MDR-1 mutation. Dogs with the mutation, generally herding breeds, can become fatally ill when prescribed some medications. She will be inducted into the National Academy of Inventors in Boston this year for her breakthrough.

Your Gifts in Action

MEET OUR SUPPORTER: ALUMNA SUSAN BRADISH

by Marcia Hill Gossard '99, '04

In the winter of 1995, Susan Bradish ('97 DVM), then a third-year veterinary student, packed her bags and boarded a plane to India carrying a Lonely Planet travel guide and a letter from a veterinary professor she was to meet in Harayana.

"I was on a shoestring budget and did not know one soul in India," says Bradish, who borrowed $1,000 from a friend to finance the trip. She also received $750 from Heifer International, a nonprofit that works with communities to end world hunger and poverty.

While there, Bradish met with a local veterinarian in Bikaner, a city near the Pakistan border. He took Bradish on farm calls. It was on one of those calls they visited a family whose only water buffalo was in labor. The buffalo died while giving birth. The calf also died.

"I didn't understand the degree of seriousness at the time," says Bradish. "That the death of a single animal can mean the difference between living and dying." The veterinarian explained to Bradish that the loss would likely mean starvation for at least some of the 20 extended family members. "That was a sobering and profound realization," she says.

But even before her trip to India, Bradish was a seasoned traveler. Raised in a military family, she moved many times, lived in six different states, and spent three years in Germany. "I was forced to learn to adapt and fit in," she says. "These qualities helped me as an adult when I traveled to new places." Bradish earned a bachelor's degree in zoology from the University of Hawaii and then worked for a few years before applying to WSU's veterinary school. "I didn't get in the first time I applied," says Bradish, who was 33 years old when she started the program at WSU after applying a second time.

Bradish says her maturity and love of travel shaped her interests as a veterinary student. During her second year, she applied and was accepted to the Smith-Kilborne Program, designed to teach veterinary students about foreign animal diseases that could harm U.S. livestock. Through the program, she studied hog cholera at the Plum Island Animal Disease Center in New York State, a foreign animal disease diagnostic lab whose goal is to protect U.S. livestock. "Hog cholera is a horrible disease that spreads quickly," she says. Once there is an outbreak, says Bradish, the only way to control the disease is to kill all the pigs within a several mile radius.

"An entire population might depend on pigs for their survival," she says. Pigs are an important source of protein in many communities around the world. "Before the program, I didn't realize the needs in developing counties."

Susan Bradish ('97 DVM) with her husband Jim.

Bradish had expected to work overseas after graduation and envisioned a career in a developing country. "I never did it," she says. She knew that her student loan debt would make it financially impossible for her to work overseas. And while for years it was the call to help people in developing countries that guided her career, the pull to Kentucky to settle down with her high school sweetheart ended up being stronger. She and Jim have been married for 15 years. Bradish retired nearly a decade ago from Sheabel Veterinary Hospital in Lexington, Kentucky where she was chief of staff.

But her desire to help still guided her. Towards the end of her veterinary career she led a Living Waters for the World mission team to the Yucatan peninsula where a village had water that was making them sick. They partnered with members of the community to build a purification system. Although she says that it was not an elaborate system, it has virtually eliminated water borne disease in the community. "It is still working today," she says.

Today, Bradish works as an artist, but has never forgotten her experiences. She started the Susan Bradish Travel Grant in 2010 because she recognized the need for veterinary expertise in developing nations and she wanted other students to gain an understanding of the daily challenges people face in most of the world. Funds from her grant have helped students travel to places such as Tanzania and Malaysia.

"Life's greatest adventure is to experience new cultures and live by your wits." she says. "I wanted to give a travel grant because money is one of the biggest obstacles to having the experience. When you are fortunate in life, you have to give back."

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

Mark your calendars

March 6 Alumni reception at the Western Veterinary Conference in Las Vegas, Nevada

April 8 College of Veterinary Medicine Open House in Pullman

April 21–23 Spring Conference in Pullman

July 15 Peter Zornes Memorial Golf Tournament in Colfax, Washington

July 21 Alumni reception at American Veterinary Medical Association in Indianapolis, Indiana

CE courses at WSU and online are offered year round. Visit **vetmed.wsu.edu/CE** *for more information.*

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