

COLLEGE OF VETERINARY MEDICINE

ACADEMIC REPORT FOR 2014-2015

2014-2015 Highlights aligned with the Strategic Plan

Achievements related to Goal 1: Provide a transformative educational experience for all learners.

a. Programs that enhance the learning environment and student success

Student success and learning are enhanced by many experiential learning opportunities in the veterinary curriculum and by opportunities provided by student organizations. Curricular experiences include the 3 week required rotation at the Oregon Humane Society's Animal Medical Learning Center where students each perform an average of 50 spay/neuter surgeries as well as directly participate in medical and surgical care of numerous OHS-owned dogs and cats. Students are also required to complete 4-8 weeks of preceptorship which are experiential learning situations in veterinary practices designed to give them practical experience in a non-University veterinary setting. Numerous electives also provide significant hands-on experience; these include, for example, rotations at Wildlife Safari, international veterinary medicine, equine lameness, and small animal dentistry.

The twenty-four diverse student organizations provide additional opportunities for students to focus on areas of professional interest as well as practical and/or hands-on experiences via wet labs, speakers and workshops.

Close to 30 DVM students each year participate in paid summer research experiences that include clinical, laboratory and international research. Many of these result in the required senior paper/presentation and some also result in published manuscripts.

The Class of 2015 had a 98% pass rate on the national board exam for veterinarians, in comparison to the national average of 95%. All 2015 graduates who were seeking professional employment had jobs within a month of graduation.

b. Advance learning through course design, assessment and faculty development

The College has 10 faculty who are members of the West Region Consortium Teaching Academy, a collaboration of the 5 veterinary schools in the western United States. Members of the Teaching Academy have completed projects such as development of a peer assessment instrument for comprehensive teaching review, a "boot camp" to introduce new veterinary faculty members to pedagogical philosophy and techniques, and have hosted two summer workshops for veterinary educators. The local (OSU CVM) teaching academy includes these regional TA members as well as anyone else in the CVM who wants to attend the monthly journal club discussions and other activities related to teaching and learning. The College also holds a biennial Teaching Retreat to provide a day-long opportunity to have discussions related to veterinary education and strategies for success. The CVM has invested in an web-

based audience response system and annually funds competitive proposals related to educational research in the College.

c. Expand strategies to recruit diverse and high-achieving students

The best examples of our strategies in this area are the expansion and ongoing success of two programs:

1) OSU SummerVeterinary Experience. Now in its fourth year, this experience is designed to introduce Oregon high school students from underserved populations to the veterinary profession as well as providing an experience and information about college life, costs, financial aid and programs. With current veterinary students as close mentors, this group of 16 students (increased from the original 10), participate in five days of hands-on experiences in different facets of clinical veterinary medicine, complete a small bench-top laboratory research project with results presented on the last day, have talks on college applications and costs, and participate in campus-based evening activities like bowling, sand volleyball and swimming. This program has become very competitive with over 70 applications for the 16 spots. We are staying in touch with program alumnae and anticipate it will still be several years before we are able to evaluate its success with respect to recruiting a diverse applicant pool to veterinary medicine.

2) Pre-vet Scholars program. This collaboration with the University Honors College was initiated in 2011 in an effort to attract high-achieving students into the health professions and specifically into veterinary medicine. The first participants from the program graduated in 2015 and one (of the original two) is entering the CVM program in the Class of 2019 following successful defense of an excellent honors thesis in veterinary immunology. The number of students in the program has varied based on availability of committed faculty mentors in the CVM faculty as close mentorship and involvement in the Pre-Vet scholars' undergraduate program is required. For this year's entering class, there will be 10 Pre-vet Scholars. Importantly, students within the program have taken ownership of the program and initiated social events, study groups and Pre-Vet Scholar policies. We have seen significant development of leadership skills among these students, in addition to their increased familiarity and involvement with the veterinary profession.

Achievements related to Goal 2: demonstrate leadership in research, scholarship and creativity

a. Attract and retain high quality faculty

Our new faculty members in 2014-2015 include Fikru Nigussie, DVM, a veterinary anatomist with a research focus in neuroanatomy recruited from Texas A and M University, Katie Curran, DVM, a newly-boarded veterinary oncologist who trained at Colorado State University, Nicole LeBlanc, DVM, a veterinary cardiologist who completed her cardiology training at Oregon State University and Stacy Cooley, DVM, a veterinary radiologist finishing her imaging residency at Cornell. All of these new faculty members are committed to academic veterinary medicine with substantial research credentials, interest and experience in teaching veterinary students and excellent interpersonal skills.

We are in the process of appointing the College's second endowed professor who will be in the area of diagnostic imaging.

The faculty is growing slowly and due to Veterinary Teaching Hospital-generated revenue with a 4.1% increase in professorial faculty in this reporting period.

b. Expand and cultivate transdisciplinary research

Examples of College projects intended to stimulate transdisciplinary research include the following:

1) With the College of Pharmacy and the College of Public Health and Human Science, the CVM annually provides funding for competitive multi-disciplinary/multi-college research grants. The intent of these funds is to generate research that uses multi-disciplinary approaches to answer health-related biologic questions.

2) The College has established a multi-disciplinary approach to funding research programs for veterinary students. Students who wish to do a research project in an area work with two faculty members from different disciplines and/or departments who are skilled in different areas. The outcome is that students are trained and mentored by multiple faculty and faculty from different disciplines work together in this process.

3) New faculty members in the Department of Biomedical Sciences have, in the last few years, begun working in new areas of research for the College, such as microbiome research. They have been integrating with and working with others both in the BMS department, and the Clinical Sciences department.

4) The College has developed two interdisciplinary groups to bring together faculty and staff from several colleges and departments. The foci of these groups are cancer research and infectious disease research.

5) The VTH has implemented new operational procedures that facilitate translational research and clinical trials in cooperation with other units, such as oncology and Pharmacy, and small animal physical therapy/rehab and Public Health

Appendix 1 is a list of the research grants > \$50,000 received by CVM faculty in the last academic year. Many investigators receive smaller grants for clinically-based research or from foundations supporting species or breed-specific studies. Overall, the number and amount of grants funded this year is decreased somewhat compared to last year which was a very good year for extramural funding for the CVM.

c. Increase the quality, capacity and impact of graduate programs

In 2014, we initiated a new graduate program in Comparative Health Science. This program is intended to utilize the resources, expertise and mentorship of the faculty in the Division of Health Sciences to provide a graduate program that can provide health science-related training and expertise from the molecular to the population level. The program currently has 3 PhD and 14 Master's students. We have recently accepted 3 more PhD candidates and 1 Master's

candidate.

Six Master's degrees were completed in the 2014-2015 academic year and the majority of these were by veterinarians who also completed residencies and became board-certified in their specialty.

d. In other ways advance leadership in research, scholarship and creativity

The College hosted two international symposia in Corvallis in FY 15. They were an International Symposium on Rehabilitation, Physical Therapy and Sports Medicine that was held from August 4-8, 2014 and was attended by approximately 260 veterinarians, students and others and the International Camelid Health Conference in March, 2015, attended by approximately 50 camelid veterinarians from across the U.S. and other countries. The College has gained a reputation as a leader in both of these areas.

Achievements related to Goal 3: strengthen impact and reach throughout Oregon and beyond

a. Position OSU's outreach and engagement programs as learning laboratories that promote high-impact learning and effectively utilize university research

The Veterinary Diagnostic Laboratory (VDL) continues to play a key role in diagnosis of animal disease in Oregon and beyond. As a member of the federal National Animal Health Laboratory Network, the VDL performs disease surveillance that is crucial in preventing and limiting animal disease outbreaks. The VDL was the laboratory that first diagnosed avian influenza in Oregon, facilitating state and federal veterinarians' rapid response plan to protect poultry producers and monitor for any possible human infection. The VDL has played a key role in documenting the spread and prevalence of *Cryptococcus gatti*, a soil-borne fungal disease that affects humans as well as all mammals. This fungal pathogen was previously considered limited to tropical and subtropical environments but we now know that it is endemic to the Pacific Northwest. In FY 2105, the VDL did rabies testing of 242 animals with 13 found to be positive. The lab is also involved in testing for West Nile Virus with 66 positive results out of testing 3,368 samples. The VDL is approved by the USDA to provide similar support to any potential foreign animal disease outbreak that could have a serious impact on the U.S. economy.

The Veterinary Teaching Hospital (VTH), both large animal, and small animal, have experienced significant increases in caseload, which translates to increased service to the animal-owning public as well as increased learning for students and trainees including residents, interns, and clinical fellows. Since FY 2011, there has been a 62% increase in small animal visits, 41.3% increase in horses, and 76.4% increase in farm animal patients. The number of animals (horses and food animals) seen on ambulatory visits has increased 25.2% since FY 2011. The number of VTH employees has increased from 49 in 2012 to the current 78. The additional positions have all been directed at improving the delivery of medical services and the teaching of veterinary students.

The College entered into a partnership with Bos Genetics, a private group of cattle producers, to jointly develop a successful program for bovine embryo transfer in the state of Oregon. This

will benefit bovine producers in Oregon, provide learning opportunities for professional students and residents, and provide funds and equipment for enhancing scholarly activity in this area.

b. Increase study abroad and strategic international research partnerships

See Appendices 2 and 3 for information about student international engagement and faculty international research partnerships.

c. Engage alumni and other external partners to advance our goals

The College's Advisory Council, composed of leaders in business, veterinary, and other biomedical fields, meets twice a year to discuss accomplishments and generate ideas for the College. In the last year, members of the Council have become much more engaged and many of these individuals have taken on major new initiatives to raise money and enhance the visibility and positive relationships of the College.

The College hosted three well-attended alumni receptions at major national veterinary meetings around the country. The Facebook page for our alumni has taken on renewed vigor with the hiring, in March, of a program coordinator with significant time allocation to alumni relations. She is also working with alumni to plan reunions and other events. This is the first time the College has had a position with a specific allocation for alumni relations and this is partly funded by an Advisory Council member/CVM alumna.

The College maintains a close relationship with the Oregon Veterinary Medical Association (OVMA) which provides white coats, stethoscopes and name tags for the incoming professional students in order to establish a close relationship with future veterinarians. The College and the OVMA jointly hold a continuing education conference in Corvallis every March, meet every six months, to discuss matters of importance to Oregon veterinarians and often collaborate on legislative issues. The incoming president of the OVMA is a College faculty member.

An important external partner for the College is the Oregon Humane Society in Portland. We jointly planned, built, and equipped the Animal Medical Learning Center, housed at the OHS and have been sending students there for required and elective rotation in small animal primary care since 2007. This collaboration between an animal shelter and a veterinary school has been the model for similar programs started throughout the United States and is widely regarded as a great success. In the last two years, we have been in discussions about broadening the partnership to jointly build a primary care animal hospital, forensics laboratory and rehabilitation facility for animals. This partnership will serve a number of purposes including enhanced small animal primary care experience and training for our students, enhanced training in veterinary forensics for residents, provision of sliding fee veterinary services for underserved dog and cat populations and increasing the Portland presence of the CVM.

d. Advance impact and reach in other ways

CVM students, faculty and staff continue to provide veterinary services to remote,

underserved populations in Nicaragua and on the Warm Springs reservation in Oregon.

Initiatives that align with:

a. Enhancing diversity

Increasing diversity of faculty, staff and students

The percentage of under-represented minority students in the professional program has steadily increased over the last 10 years and has stayed in the 10-12% range in the last 5 years. This is similar to the slow, but steady increase in veterinary medicine in general. One initiative to increase this percentage is the veterinary summer experience for under-represented high school students described under Goal 1.

With respect to faculty and house officers (residents, interns, and clinical fellows), the College has remarkable international diversity with FY15 hires from Ethiopia, Ireland, Spain, Australia, Italy, Hong Kong, Brazil, and the Czech Republic. The overall increase in international outreach is resulting in relationships and collaborations with international students and colleagues which are impacting the applicants to our training programs.

Developing comprehensive work-life balance programs

The CVM has initiated the process to hire a CVM Mental Health and Wellness Program Coordinator to provide a variety of services for College students, faculty and staff. These services will include individual counseling, curricular input, help with new student orientation and other initiatives to be determined.

b. Stewardship of resources

External revenue from the VTH increased 18% last fiscal year (from to \$ 5,249,495 to \$6,208,948). Total expenses (pay, service and supplies and capital outlay minus service credits) increased less than revenue (8.2%).

From the development perspective, the College was able to garner \$420,000 in research support, \$250,000 in unrestricted funds, \$215,000 for scholarships, \$80,000 to support large animal clinical programs, \$28,000 to support small animal clinical programs, and \$8,000 in funds to provide veterinary services to pets that would otherwise not receive medical care for financial reasons.

c. Technology as a strategic asset

In FY 15, the College increased its electronic storage capacity to accommodate student, staff and faculty needs by an increase of 20 terabytes of storage. The electronic veterinary hospital management system has begun a transfer to a new platform; a project that is anticipated to take several years. The paper student record system migrated to an electronic student record system. NovaSTORE software is being used to manage and protect confidential hospital data.

Appendix 1 – Continuing and new extramurally-funded research projects (>\$50K in total budget)

CVM Investigator	Title	Agency
Bermudez, Luiz	Strategy for Anti-tuberculosis therapy	NIH
Bermudez, Luiz	In Vitro/Vivo Efficacy of Ciprofloxacin for inhalation against <i>M. avium</i> and <i>M. abscessus</i>	NIH
Bermudez, Luiz	HP contamination analysis	Hewlett-Packard Company
Bermudez, Luiz	Genes Associated with <i>M. avium</i> Pathogenesis	NIH
Bermudez, Luiz	Efficacy of Oral Aminoglycoside-Cochleate Formulations	NIH
DeMorais, Helio	OSU Maddie's Shelter Medicine Residency Program at Oregon Humane Society	Maddie's Fund
Dolan, Brian	Ubiquitin conjugation and direct MHC class I antigen presentation	NIH
Estill, Charles T.	Ram model of neuroendocrine control	NIH
Hase, Claudia	Diagnostic tools for managing vibriosis in marine shellfish hatcheries	USDA
Hase, Claudia	Catalyzing new international collaborations: Developing diagnostics for <i>Vibrio coralliilyticus</i> and coral vibriosis	National Science Foundation
Helfand, Stuart	Alpha-radioimmune therapy in dogs	F. Hutchinson Cancer Research Center
Jolles, Anna	Persistence of a highly contagious pathogen: ecological and evolutionary mechanisms in foot-and-mouth disease virus.	USDA
Kent, Mike	A Zebrafish Model to Study the Role of the Microbiota in the Etiology of Intestinal Cancer	NIH
Magnusson, Kathy	Cross-training in human functional imaging for cognitive aging research	NIH
McKenzie, Erica	Exertional rhabdomyolysis in Arabian horses	Morris Animal Foundation
Moulton, Hong	Multiscale analysis of influenza host-pathogen interactions: Fluomics	NIH
Ramsey, Steve	Systems analysis of transcriptional interactions underlying foam cell formation.	NIH

Riebold, Thomas W.	Telazol in dogs	Zoetis
Shulzhenko, Natalia	Gut Microbiota Mediates the Interplay Between Immunity and Glucose Metabolism	NIH
Troyer, Ryan	Novel Feline Gammaherpesvirus	Morris Animal Foundation

Appendix 2 International Experiences for Students 2014-2015

International students at the OSU-CVM summer 2015

Student Name	Country of Origin
Constance Idiart	France
Shotaro Hirata	Japan
Han Liu	China
Chun Liu	China
Qing Wang	China
Zhixin Wu	China
Caroline Pieplu	France

CVM students studying internationally 2014-2015 academic year

Student Name	Country Traveled To
Gabrielle Wallace	France
Michelle Flores	India
Kara Leavitt	India
Rebecca Turk	India
Marianne Pan	India
Morgan Movius	South Africa
Alannah Anderson	Nicaragua
Alexa Richmond	Nicaragua
Alixandra Elsen	Nicaragua
Andrea Farkas	Nicaragua
Ariana Borba	Nicaragua
Becca Lulay	Nicaragua
Danielle Mechur	Nicaragua
Gabrielle Wallace	Nicaragua
Jess Rigling	Nicaragua
Joanna Murdoch-Sandwich	Nicaragua
Keaton Judkins	Nicaragua
Kelli Kidd	Nicaragua
Kendal Zwang	Nicaragua
Kimberly Malette	Nicaragua
Kira Jarosz	Nicaragua
Kristi Bunde	Nicaragua
Lauren Clarke	Nicaragua

Lindsey Bohard	Nicaragua
Michelle Flores	Nicaragua
Rachele Bochart	Nicaragua
Rebecca Turk	Nicaragua
Reese Douglas	Nicaragua
Renee Hlasnik	Nicaragua
Sarah Hunter	Nicaragua
Sarah Montoya-Yamada	Nicaragua
Stephanie Wermuth	Nicaragua
Wesley Pospichal	Nicaragua
Rebecca Sullivan	Nicaragua
Renee Baumann	Nicaragua

Appendix 3 Strategic International Research Partnerships

Dr. Anna Jolles: South Africa National Park Service and University

Dr. Natalia Shulzhenko: Brazil, University of Sao Paulo

Dr. Luiz Bermudez: Brazil, University of Santa Catarina

Dr. Ling Jin: China, University of Nanjin and University of Whuan

Dr. Mahfuz Sarker: Saudi Arabia and Japan

Dr. Manoj Pastey: India, Veterinary School of Bangalore

Dr. Morrie Craig: Kuwait, Kuwait Institute for Scientific Research

Performance on College-level metrics – Appendices 4- 7

Oregon State University
College of Veterinary Medicine
 Annual Academic Program Review 2012-13

PART 1

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	% Change '12 - '14
Faculty FTE													
Professional	24.3	22.9	23.8	37.5	40.3	45.3	42.9	44.9	44.4	47.5	49.8	49.4	4.0%
Non-Professional	28.8	26.0	30.0	35.9	38.7	41.7	43.9	40.8	41.1	39.4	38	34.1	-13.5%
Total Faculty FTE	53.1	48.9	53.8	73.4	79.0	87.0	86.8	85.7	85.5	86.9	87.8	83.5	-3.9%
E&G Tenured/Tenure Track	17.5	16.0	15.9	26.0	25.8	26.0	25.8	26.0	28.9	30.9	34.2	30.3	-1.9%
Faculty Headcount													
Professional	25	23	25	39	43	48	45	48	48	51	53	52	2.0%
Non-Professional	30	29	32	38	40	43	47	44	44	43	41	37	-14.0%
Total Faculty Headcount	55	52	57	77	83	91	92	92	92	94	94	89	-5.3%
E&G Tenured/Tenure Track	18	16	16	26	27	27	27	27	29	31	37	33	6.5%
SCH (Academic Year)													
Undergraduate	176	129	119	108	108	108	121	148	162	137	105	107	-21.9%
Lower Division	80	96	119	108	108	108	113	142	136	137	103	99	-27.7%
Upper Division	96	33	0	0	0	0	8	6	26	0	2	8	-
Graduate	77	100	116	153	138	118	55	106	214	424	532	636	50.0%
First Professional	3861	4395	7420	10016	10811	10778	10929	11676	11908	12064	12007	12031	-0.3%
Other	0	0	0	0	0	0	0	0	0	0	0	0	-
TOTAL SCH	4114	4624	7655	10277	11057	11004	11105	11930	12284	12625	12644	12774	1.2%
Fall Enrollment by Major													
Undergraduate	0	0	0	0	0	0	0	0	0	0	0	0	-
Graduate	4	2	2	4	3	4	4	4	7	12	15	19	58.3%
First Professional	70	81	134	182	196	192	196	211	217	222	223	223	0.5%
TOTAL Enrollment	74	83	136	186	199	196	200	215	224	234	238	242	3.4%

Oregon State University
College of Veterinary Medicine
 STRATEGIC PLANNING METRICS 2012-13

PART 1

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	College Targets 2017-18
Goal 1. Provide a Transformative Educational Experience for all Learners.													
1.3 First Year Retention Rate (College/University)	n/a												
1.4 6-Year Graduation Rate (College/University)	n/a												
1.5 Junior Transfer 4-Year Graduation Rate (College/University)	n/a												
1.6 % US Minority Students	1.4%	3.6%	3.7%	3.2%	5.0%	5.1%	4.5%	6.5%	10.7%	11.5%	10.1%	12.0%	
1.7 % International Students	1.0%	1.0%	1.0%	2.0%	1.0%	2.0%	4.0%	4.0%	4.0%	3.0%	3.0%	3.0%	
1.8 % High Achieving Oregon High School Graduates	n/a												
Goal 3. Strengthen Oregon State's Impact and Reach throughout the state and beyond.													
3.2 Invention Disclosures	0	0	0	1	2	2	5	3	3	1	1	2	
College Specific Metrics													
2.x.1 DVM Graduation Rate	91.9	89.2	94.6	95.0	95.9	91.7	92.3	94.2	87.5	91.2	94.8		
2.x.2 First Year Retention Rate	100.00	97.90	97.90	97.90	98.00	88.00	96.00	98.00	94.00	92.00	93.00	95.00	
2.x.3 First Professional Students Admitted/ Applicants	36/ 507	48/ 659	48/ 669	51/ 672	49/ 658	48/632	50/554	54/516	56/463	53/508	54/751	51/895	
Applicants	3/ n/a	1/ 12	0/ 11	3/ 9	1/ 6	3/11	2/8	3/11	5/17	10/10	3/3	3/3	

Oregon State University
College of Veterinary Medicine
 Annual Academic Program Review 2014-15

PART 2

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	% Change '13 - '15
Resources (Fiscal Year)														
E&G - Ending Budget (\$)	9,140,514	13,126,178	14,164,218	13,587,963	15,708,603	18,890,712	18,974,112	18,423,066	20,246,622	21,643,790	22,127,688	23,574,892	24,358,881	10.1%
Total R&D Expenditures (\$)	973,245					2,313,693	3,402,872	3,100,921	3,937,470	2,902,614	2,447,856	2,489,359	FEB 2016	-
Awards from Grants and Contracts* (#)	24	13	17	42	35	36	32	53	34	30	24	31	21	-12.5%
Awards from Grants and Contracts (\$)	2,336,356	829,067	1,583,444	2,168,870	2,697,040	2,084,053	4,111,116	3,545,550	2,618,166	1,956,307	1,681,511	3,906,737	1,364,136	-18.9%
Private Giving (\$)							2,031,869	2,603,264	1,566,990	852,854	1,214,819	1,803,830	1,248,177	2.7%

Strategic Planning Metrics 2014-15

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	College Targets 2017-18
Goal 2. Demonstrate Leadership in Research, Scholarship and Creativity while enhancing preeminence in the three signature areas of distinction														
2.1 Total R&D Expenditures	see APR data above													
Goal 3. Strengthen Oregon State's Impact and Reach throughout the state and beyond.														
3.5 Annual Private Giving	see APR data above													

* From 2000-01 to 2007-08, the number of grant/contract awards is based on the accounting transactions from the College's award index, rather than the actual number of awards received by the college.

Oregon State University
College of Veterinary Medicine
 Annual Academic Program Review 2014-15

PART 3

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	% Change '13 - '15
Degrees (academic year)														
Bachelor	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Master	0	1	1	0	1	2	1	1	1	1	2	6	6	200.0%
Doctorate	0	0	0	0	0	0	0	0	0	0	0	0	0	-
First Professional	34	33	35	37	50	44	48	43	49	58	55	52	57	3.6%
Total Degrees	34	34	36	37	51	46	49	44	50	59	57	58	63	10.5%

Strategic Planning Metrics 2014-15

	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	College Targets 2017-18
Goal 1. Provide a Transformative Educational Experience for all Learners.														
1.1 Degrees Awarded-Total see APR data above														
Goal 2. Demonstrate Leadership in Research, Scholarship and Creativity while enhancing preeminence in the three signature areas of distinction														
2.3 PhD's Awarded see APR data above														