



UNIVERSITY OF CALGARY
FACULTY OF VETERINARY MEDICINE

University of Calgary Faculty of Veterinary Medicine
(UCVM)

Curriculum Review Public Report
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“Bringing innovation and community together to advance animal and human health”

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ABBREVIATIONS

AbVMA- Alberta Veterinary Medical Association
ADA- Associate Dean Academic
AoE- Area of emphasis
AVMA- American Veterinary Medical Association
BSE- Bovine spongiform encephalopathy
CBEM- Department of Comparative Biology and Experimental Medicine
COE- Council on Education (of AVMA/CVMA)
CVMA- Canadian Veterinary Medical Association
DVLC- Distributed Veterinary Learning Community
DVM- Doctor of Veterinary Medicine
DVTH- Distributed Veterinary Teaching Hospital
EPH- Department of Ecosystem and Public Health
GPA- Grade Point Average
GVP- General Veterinary Practice
PAH- Department of Production Animal Health
SARS- Severe acute respiratory syndrome
UCVM- University of Calgary Faculty of Veterinary Medicine
VCDS- Veterinary Clinical and Diagnostic Sciences
VMS - Veterinary Medical Sciences

CURRICULUM REVIEW TASK FORCE ACKNOWLEDGEMENTS

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The curriculum review task force has worked hard to produce this document on behalf of the Faculty of Veterinary Medicine. The individual contributions of the members to the improvement and continued growth of the DVM program are gratefully acknowledged.

The task force would like to recognize the amazing staff support received from Ms. Kristen Story. She worked diligently to collect all the course and session information from the coordinators and faculty members, and then spent many hours entering this into the One45 system to generate a comprehensive course catalogue and curriculum map. Thank you, Kristen, for your efforts and support of this task force.

We also thank Dr. Matt Read and Ms. Lorraine Toews for lending their expertise to the literature reviews and admissions data analysis.

Without the support of Ms. Patti Dyjur and Ms. Frances Kalu from the Taylor Institute for Teaching and Learning, we would still be wondering what we were supposed to do. They provided help in developing the guiding questions and supported our review process and final report. We appreciate their help.

The task force also acknowledges the effort made by all of the students and faculty of UCVM to engage in this process and to provide abundant feedback. We have endeavored to capture that information here and have reviewed everything that was provided to us by these groups as part of our comprehensive look at the program.

EXECUTIVE SUMMARY

The DVM (Doctor of Veterinary Medicine) Degree program at the University of Calgary's Faculty of Veterinary Medicine (UCVM) is based upon a four-year model. The curriculum can best be described as an integrated core-elective model, which is outcome-based. The discipline courses act as the foundation on which the basic and clinical sciences are then further elaborated via three courses that span years 1-3: clinical presentations, clinical skills and professional skills courses. The final year is delivered in a distributed model teaching hospital that utilizes practices and institutions across the province of Alberta.

The initial curriculum concept was developed in 2005 and the first iteration of the final year program was delivered in 2012. There have been continual modifications and revision to single courses, or parts of courses, since the inception of the program but a formal wholesale review has not been undertaken to date. This review is preceding an accreditation site visit in spring 2019 by the AVMA-CVMA COE (American Veterinary Medical Association – Canadian Veterinary Medical Association Council on Education) and will help meet their requirement for the curriculum to be reviewed in its entirety every 7 years.

The current review reported here took 11 months to complete while some of the background preparation began a couple years prior. The curriculum review task force was struck by Dean Singh and the Department Heads in November 2016 and started to work in January 2017. The curriculum was reviewed using a large number of surveys and data that were collected over the lifetime of the program but never comprehensively evaluated. The review team was comprised of Emma Read (lead), Amy Warren, Kent Hecker, Rob McCorkell, Marie France Roy, Carl Ribble, Karen Liljebjelke, and Jacob Thundathil. The entire faculty participated in the process by providing written feedback, engaging in surveys, attending town hall meetings and a retreat, and revising draft documents. The entire student body also fully participated by engaging in surveys, providing written feedback, attending town hall meetings, and revising draft documents. Others (strategic planning committee, stakeholders advisory committee, employers, graduates and DVLC [Distributed Veterinary Learning Community] practitioners) participated in the process by engaging in surveys, providing written and verbal feedback, and attending meetings.

This report is based on direct evidence as reported from faculty, students, DVLC, stakeholders (including external), and employers, as well as foundational documents and literature. Overall, the main finding of this work was that the curriculum has evolved and worked well to date, and has been successful in educating veterinarians who enter clinical practice but also go on to pursue a broader range of veterinary careers later on. We developed a range of action items that related to student wellness focus, teaching and learning professional development, curriculum, and future directions for the program. These items have been reviewed and prioritized by the faculty and students to ensure buy-in for implementation and action. To highlight a few, there will be work on developing improved wellness programming for students, a comprehensive review of the curriculum to look for gaps and overlaps and further revision to correct and balance for these, as well as increased education of instructors and continued assessment development for the DVLC.

The success of this review was in large part related to the broad range of data points available from accreditation documents, to literature reviews, to abundant feedback from all parties

(students, faculty, staff, DVLC practitioners, external stakeholders, and employers). The other critical element in completing this review was the undertaking of a large-scale mapping exercise that started with the creation of program and enabling competencies, and culminated in an extensive (~2000 course outcome points) curricular map that will serve as the guide for future review and revision.

This review outlines a current “state of the union” report summarized from data that highlights where the curriculum and program are at after the first 12 years. The report will serve as the starting point for determining value of various program components and format for delivery as the Faculty moves into the next phase of our growth.

PROGRAM CONTEXT

The University of Calgary Faculty of Veterinary Medicine (UCVM) was established in 2005 in response to a recognized need for more graduate veterinarians and increased veterinary education, research and service in specified areas in Alberta. The first class, the Class of 2012, entered the program in September 2008 and graduated in May 2012. UCVM has now graduated 6 classes of DVM students to date. The current enrolment is 126 DVM students for September 2017. There are also approximately 130 (80 VMS and 50 Non-VMS), Graduate students supervised by UCVM faculty members in the Veterinary Medical Sciences and other graduate programs.

Organization of the Faculty: UCVM is committed, as stated in its mission statement, to educating DVM students, conducting research, providing graduate education, and delivering continuing professional development to meet the needs of Alberta, while contributing to the broader Canadian and global societies. UCVM is organized on a centrally managed model with multidisciplinary departments.

Organization of the Curriculum: The curricular model employed has best been described as an integrated core-elective curriculum. The curriculum is delivered in partnership with the veterinary community across Alberta. The program is based on an outcomes-based model that was established with an initial 40% reduction in the time allocated to the basic discipline subjects to allow room for larger integrative courses that span the first three years. The discipline courses act as the foundation on which the basic and clinical sciences are then integrated through clinical presentations, clinical skills and professional skills courses. The general veterinary education is intended to provide a foundation in comparative medicine, to prepare for general veterinary practice with all major domestic species, and to ensure students have an understanding of ecosystem and public health, research, and professional skills. The core program is oriented to prepare students for rural community veterinary practice and thus provides a foundation for all career pathways in veterinary medicine. The fourth year is a combination of on-campus (approximately 40%) and off-campus (approximately 60%) practicum rotations. The fourth year has 20 weeks of mandatory rotations that cover the major domestic species. The 10-week elective program in the final year provides enhanced educational opportunities in four Areas of Emphasis: production animal health, equine health, ecosystem and public health, and investigative medicine. The year IV clinical enrichment electives (10 weeks) cover all areas of clinical and professional veterinary medicine across a broad range of animal species. Maintaining oversight and quality in the fourth year are critical aspects of the partnership model being employed in the distributed veterinary teaching hospital.

Physical Facilities and Equipment: Research, education and service activities are carried out at two major campus sites and off-site in the final year within the Distributed Veterinary Learning Community (DVLC). The Foothills campus houses student support, educational activities, faculty and administrative offices, and research laboratories. Approximately 85% of the academic staff and 60% of support staff are currently based at the Foothills campus. The majority of library and information resources are based in the Health Sciences Library at the Foothills campus. UCVM has a full-time librarian to develop and manage all library and information resources. Clinical skills, professional skills, anatomy and pathology are taught in

the Clinical Skills Building at the Spy Hill campus. Both buildings are well equipped and meet appropriate health and safety standards. The Spy Hill campus also houses the Veterinary Sciences Research Station and the Wildlife Research Station. Final infrastructure completion at both sites is ongoing.

Clinical resources are provided by UCVM at the Clinical Skills Building and through partner organizations in the Distributed Veterinary Teaching Hospital (DVTH), our clinical partners within the DVLC. An appropriate breadth and depth of clinical resources and professional opportunities are available. The main challenge of accessing the full range of clinical resources available relate to logistics such as student and faculty scheduling, travel and accommodation.

Students: The inaugural class of thirty-four Albertan students enrolled in 2008 and since then we have graduated 181 students. Student support is available through university-based student services and UCVM's own Office of Student Experience. The main challenge for student support is ensuring that students have appropriate access regardless of their location and phase of the program.

Admission: Procedures for admission are designed to facilitate recruitment of students that will succeed in our program and achieve the Mission of the Faculty. The applicant pool remains strong, with a ratio of 9 applications per place for the class of 2021. The academic threshold for entrance into the program remains high (3.52 GPA for consideration for interview, 3.63 GPA for admission to the class of 2021).

Faculty: UCVM faculty (65 academics and 30 adjuncts) recruited to date have a wealth of academic, research, clinical and professional experience. On-going recruitment to replace recent attrition should increase the depth and breadth of expertise further. We currently have the ability to provide a general veterinary practice education and support the four areas of emphasis.

Research Programs: Research programs are focused on areas of need and strength in Alberta, while contributing to creation of new knowledge that will serve the global community. Research is integrated into the DVM curriculum to strengthen critical thinking, analytical skills, and lifelong learning.

Outcomes Assessment: Assessment of student, institutional and clinical competency outcomes are essential parts of our program. We incorporate objective structured clinical examinations from the first year of our program, and use script concordance testing, as well as workplace based assessments in the final year. All courses are expected to have clearly defined learning objectives that tie back into program level outcomes and enabling competencies.

The DVM program is designed to achieve the mandate provided to UCVM by the Government of Alberta, as well as achieve the Mission of UCVM. The DVM program must also meet or exceed the accreditation standards of the AVMA/CVMA Council on Education (COE).

Major goals and objectives of the Faculty of Veterinary Medicine:

Alberta is a province with abundant natural resources and a population of over 3 million people. It has a diverse agricultural sector including dairy, beef, swine, and poultry production. The economic and societal consequences of BSE and SARS in 2003 led the provincial government to conclude that the health of Albertans and their Agri-food economy needed a strong veterinary presence in Alberta, particularly in support of production animal health, rural communities, and animal-human-environment interactions. As a result, the University of Calgary Faculty of Veterinary Medicine (UCVM) was established in mid-2005, with the objectives of:

- 1) Educating veterinarians with expertise relevant to Alberta's current and future animal and public health needs, with a particular focus on serving rural Alberta;
- 2) Graduating veterinarians with highly developed practical veterinary and professional skills;
- 3) Creating the veterinary expertise and knowledge to support rural development and sustainability, including production animal industries, equine industries, and the environment;
- 4) Developing a research intensive faculty to address the needs for research and expertise in veterinary and comparative medicine and health;
- 5) Expanding the interactions between animal and human health related disciplines; and
- 6) Complementing and building on existing strengths in animal health in Alberta and western Canada.

UCVM delivers a comprehensive general veterinary education core program that provides an excellent foundation for **general veterinary practice** (primary care) by educating students to deliver entry-level veterinary services for the major domestic species and to develop professional skills relevant for rural community veterinary practice¹, consistent with its mandate from the province and the university. Students are prepared to pursue careers in all areas of veterinary medicine, but the DVM program is enhanced in areas of strategic importance to Alberta at the time of establishment, termed Areas of Emphasis:

Production animal health: Population and individual animal health of all food and other production animal species; educating veterinarians to meet the needs of the livestock industry and rural Alberta.

Ecosystem and public health: Animal and public health at the interface of domestic animals, wildlife, humans and the environment; educating veterinarians to meet the needs of society through public and private practice in areas related to public health, food safety, environmental and agricultural interfaces, wildlife/conservation/zoo medicine and health.

Equine health: Population and individual veterinary care of horses; educating veterinarians to meet the needs of the horse industry, horse owners, and rural Alberta.

Investigative Medicine: Comparative medicine and biomedical research; encouraging students to pursue careers advancing animal and human health through research (basic, clinical, applied, or population health).

In order to graduate veterinarians with relevant and highly developed practical skills, we collaborate with the Alberta veterinary profession and other partners in the delivery of the

fourth-year practicum program through a Distributed Veterinary Learning Community (DVLC).

The DVLC includes private veterinary practices in a Distributed Veterinary Teaching Hospital (DVTH) that acts as the college's equivalent of the academic teaching hospital, as well as other clinical and professional environments (e.g. wildlife and zoo practices, government departments and laboratories, animal industries; other university environments) in Alberta, Canada, and internationally. The DVLC can also be engaged in research activities of the college.

¹ Rural community veterinary practice is defined as multispecies veterinary practice, typically based in communities of <25,000 people. The goal of UCVM is to ensure that its graduates are also equipped to carry out public practice responsibilities, support community needs in public health, and address relevant environmental issues in the rural environment.

SUMMARY OF THE GUIDING QUESTIONS USED IN THIS CURRICULAR REVIEW
(AS APPROVED AT FACULTY COUNCIL IN JANUARY 2017)

<u>Guiding Question</u>	<u>Rationale</u>	<u>Data we have</u>	<u>Data to Collect</u>	<u>Collection Strategy</u>
1. What is the students' workload and do they have sufficient time provided to succeed in their studies?	- Aligns with institutional priorities (Eyes High Strategy, Mental Health Strategy) -Some evidence that there has been "creep" in the number of curricular hours -60 vs. 90 minutes class time debate	- Spreadsheet with hours per course and hours per week tracked since 2010 - Comparison with other vet schools in Canada - COE mandated surveys - Course evaluations (student comments) -Strategic planning report -NSSE survey results	- Input from faculty/staff on their own workload - Input from current students about course load and strategies to cope -literature reviews	- Focus groups with faculty and staff - Survey of students -Student town hall - Faculty retreat question - Meeting minutes – year teachers' committees, staff meetings
2. To what extent does our current curriculum align with the original vision, and is this where we wish to be?	- Look at the original vision of the curriculum - What has changed? Where is the drift? Do we want to be here or nearer to the original vision? Is the original vision relevant now?	- Original curriculum committee docs (minutes, vision) etc. - Input from faculty involved in original curriculum planning - Current curriculum mapping -Emerging industry trends, university trends, strategic plan, etc.	- Input from faculty, how do they feel about original and current curriculum?	- Faculty retreat question - Focus groups
3. What are the strengths and weaknesses of the curriculum at present? How might we improve upon the perceived challenges?	- What should be retained and what might need improvement in a refresh or revision of the curriculum?	- COE mandated surveys – exit, one year out, employers - Course evaluation summaries - DVLC/Clinician survey re year IV students	- Input from broad faculty, what do they think our strengths and weaknesses are. -Input from students	- Faculty retreat question - Focus groups - Student town hall
4. Do we have the appropriate prerequisites for entry into	- Suggestions have been made by students that 1 st year might be	- Admissions requirements (UCVM compared with other Canadian	- Where do the students come from? - Are students	- Student survey of year 1 students (Class of 2020) – were you prepared

the program and to support upper level courses?	repetitive of their undergraduate work. Do we change focus on prerequisites coming in and assume they are at the same level? Would this allow more time to teach other content?	vet schools) - Admissions data (M. Read)	able to be successful in this course? -Do the courses they take or the degree they pursue factor into future performance in the program? -What requirements do other programs use?	for each course in year 1? - Admissions data – are students from various backgrounds able to be successful?
5. Do the areas of emphasis align with where the graduates end up working on exit and does the program meet their professional needs?	- Large percentage of graduates go into clinical practice according to exit surveys and one-year out surveys	- Curriculum committee and year teachers’ minutes related to AoE courses - documentation of discussion/decisions re AoEs - Survey of faculty about AoEs - Strategic planning retreat and - COE mandated surveys - Employment stats (ABVMA, CVMA surveys)	- What might faculty or stakeholders envision as other possibilities for AoEs? If the current AoEs were no longer relevant, what else might we consider? - What are the emerging trends in vet med and agriculture?	- Faculty retreat question - Literature review - current trends in veterinary medicine and agriculture
6. Does the program need to become less specialized and have more emphasis on creating a broad general veterinary practitioner?	-To fulfill our mandate of creating “rural mixed practitioners” do we need to further emphasize general practice to ensure graduates are more suitably trained or is the current program balanced in perspective as is?	- Dr. S. May publication (Vet Record) - COE mandated surveys - what employers need and what grads go out and do - DVLC and Clinician survey re Yr IV students	- 2012 grads, survey question to ask why they felt compelled to do internships, residencies and what drove them to specialize (5 year out survey) - Literature related to primary care vs. specialization in medical education	-Literature review

ACTION PLAN

This report is based on direct evidence as reported from faculty, students, DVLC, Stakeholders (including external), and employers, as well as foundational documents and literature. As with all AVMA-CVMA COE accredited colleges, the curriculum is owned by the faculty members. The following recommendations are written with the understanding that faculty members will meaningfully engage and participate in this process/recommendations/working groups for the betterment of our curricula, school and profession. Success requires not only participation, but also recognition by administration of faculty's time and dedication.

The curriculum review task force has attempted to break this action plan down into discrete recommendations that can be accomplished by working groups across the program to contribute to the greater whole. We would encourage all faculty, staff, students and DVLC to be engaged in this process and further improve upon what we have collectively built.

After our extensive review of the available data, the task force found that most of our stakeholders believe that our curriculum is founded on best practices and is student centered. The recommendations outlined in this report are aimed at building on our curricular success and increasing our efficiencies and future strengths. We also recognize the importance of evaluating the long-term feasibility and sustainability of this program.

Timeline:

Short term - < 1 year; Medium term – 2-3 years; Long term – 5 years or more; Ongoing

The following are the priority areas determined from the Town Hall meeting (September 22, 2017) and follow-up survey of faculty and students (30 respondents faculty; 25 respondents students)

<u>RECOMMENDATION</u>	<u>TIMELINE</u>	<u>WHO IS RESPONSIBLE</u>
STUDENT FOCUS		
1. Develop wellness programming for students and faculty within UCVM	Medium Term, On-going	Student experience office staff and Associate Dean Academic. Professional skills program team.
2. Create a timetabling working group to evaluate if there are efficiencies to be gained so that larger blocks of protected time might be made available for students and faculty	Medium Term, On-going	Timetabling working group with accountability to and oversight from the curriculum committee and Associate Dean Academic.
TEACHING AND LEARNING PROFESSIONAL DEVELOPMENT		
3. Create more	Short Term, On-going	DVLC Educator, Year IV

comprehensive teacher training for DVLC practices. Evaluate the DVLC's ability to assess and monitor improvements in quality of assessment as training is implemented. Demonstrate change as part of accreditation process.		Teachers Committee (assessment working group), Associate Dean Academic
4. Audiovisual and Information Technology Systems – Continue to try to improve these systems by working with AV and IT centrally to manage current challenges.	Short Term	Dean, Associate Dean Academic, Director of Operations
CURRICULUM		
5. Establish a working group to explore how to resource and develop our understanding of how the clinical presentation model can be expanded to better fit the veterinary environment and strengthen teaching of diagnostic reasoning.	Short Term, On-going	Faculty working group (led by Clinical Presentation Program Chair) to review clinical presentations courses – structure and content.
6. Establish faculty working groups to use course mapping, course cataloguing, and data reviewed in guiding question 3 response to evaluate courses for content gaps and overlaps.	Short Term, On-going	Faculty working groups with accountability to and oversight from the curriculum committee -These working groups will be led by members of the curriculum committee and populated on a voluntary basis by members of the faculty, DVLC and students
7. Maintain program strengths and support their on-going development.	Short Term, On-going	Curriculum committee and faculty members
8. Establish working groups to review course content and create solutions for addressing challenges or deficiencies	Short Term, On-going	Faculty working groups with accountability to and oversight from the curriculum committee -Include or led by content area experts

9. Re-evaluate content and balance across the curriculum for competency delivery and scheduling (synchronization, length of courses)	Medium Term (dependent on the outcomes of the overlaps and gaps/strengths/challenges and deficiencies working groups), On-going	Faculty working groups with accountability to and oversight from the curriculum committee
10. Continue to make improvements to workplace based assessment methods utilized in the final year program	Short Term, On-going	Faculty (assessment) working group with accountability to and oversight from the curriculum committee and (year IV Teachers committee re: workplace assessment)
FUTURE DIRECTIONS		
11. Working with the curriculum committee to ensure that the core general veterinary practice skills are adequately addressed and are not lost at the expense of the AOE's.	Short Term, On-going	Associate Dean Academic Areas of emphasis working group Curriculum committee

