

Ontario Veterinary College 2012-2017 Integrated Plan

Beginning the next 150 years.....

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Ontario Veterinary College 2012-2017 Integrated Plan

Table of Contents

	<i>Page</i>
<i>Executive Summary</i>	3
<i>OVC 2012-2017 Integrated Plan</i>	7
I. Introduction: OVC Vision, Mission and Goals	7
II. Structure and Funding	7
III. Academic Programs	8
IV. Integrated Planning Process	9
V. Current Environment and Direction	9
VI. Completed Initiatives from 2006-2012 Integrated Plan	12
VII. Initiatives for OVC Integrated Plan 2012-2017	14
VIII. Assessment Methodology	21

OVC 2012-2017 Integrated Plan Executive Summary

The Ontario Veterinary College first opened its doors in 1862; from that first day until the present, faculty and students have worked to improve the lives of animals and humans. Today, the College's educational programs include the four-year professional DVM degree; BSc degrees with other colleges in Bio-Medical Sciences and Toxicology; graduate programs for graduate diploma (GDip), MSc, Master of Public Health (MPH), Master of Biomedical Sciences (MBS), PhD, and Doctor of Veterinary Science (DVSc) degrees; clinical specialists-in-training programs; and the Summer Leadership and Research Program for DVM and BSc students. Students educated through OVC learn a comparative, cross-species approach to diagnostics, epidemiology, and preventive medicine in order to provide comprehensive, global solutions.

The External Environment

The role of OVC within Ontario and beyond continues to evolve. Farm animal health remains a key component of our mandate; animal agriculture is a major economic driver for the province; Ontario has more than 380,000 horses, the fourth largest racing jurisdiction in North America and a growing performance horse sector. In addition, Canadians spend well over \$3 billion annually on food, veterinary care and supplies for their companion animals – more than \$1 billion of that is in Ontario alone. The pet industry also supports more than 40,000 jobs nationally.

There is growing recognition of the translational nature of veterinary and biomedical research to help solve human health problems and provide opportunities for collaboration and partnerships. Society has many needs and desires that influence the role of OVC, such as safe and sufficient food production; ensuring the welfare of animals; rising expectations of animal owners; and the necessity for integrated solutions for global problems. Partnerships, collaborations, and networks are being used and optimized wherever possible to advance science, knowledge, and develop solutions to animal and human health-related issues.

The Operating Environment

Attracting and retaining prominent scholars and outstanding students who will find solutions for critical animal, human and ecosystem health issues continues to be a major focus of the OVC.

Faculty, staff and students who participated in developing this Integrated Plan described the OVC operating environment as characterized by:

- Changing funding sources and competition for resources
- Increased accountability, scrutiny, and public expectations
- Changing views on animal value, use and welfare
- Rapid introduction of new technology, and information overload
- Changing demographics, population growth and urbanization, and adaptation of agriculture

Highlights from the 2006-2012 OVC Integrated Plan

The 2006-2012 OVC Integrated Plan and the process involved in its initial development and implementation has helped increase collaboration across the College. Selected highlights of accomplishments include:

- Establishment of the University of Guelph Centre for Public Health and Zoonoses (CPHAZ) focusing on public health research at the human-animal-environmental interface, using interdisciplinary research teams that span basic laboratory sciences to applied field studies, and from animals to humans.
- Establishment of the University of Guelph Institute for Comparative Cancer Investigation (ICCI) where researchers study naturally occurring cancers in dogs and cats and conduct clinical studies that parallel human research. Investigators study all aspects of cancer including abnormal cells and tissues at the molecular level, applied clinical care, cancer nutrition and prevention, environmental factors and societal impacts.
- Initiation of the Masters of Public Health (MPH) graduate program, a 5-semester professional degree with concentration in epidemiology, environmental public health, infectious diseases, and zoonotic, food borne and waterborne diseases. The program prepares public health students and professionals for careers addressing the present and future needs of public health in Ontario, Canada, and internationally.
- Initiation of a companion animal primary healthcare program that integrates preventive and general medicine with nutrition, behaviour, public health, good citizenship, rehabilitation, communication and animal welfare. Student veterinarians from all four years of the curriculum gain hands-on learning experience that increases their competence and confidence in client and patient care.

2012-2017 OVC Integrated Plan – Continuing and New Initiatives

Ensure that OVC Remains Accredited by Addressing Deficiencies in Infrastructure and Equipment and Stabilizing Finances

The major threats to OVC's accreditation are the outdated and insufficient clinical facilities and equipment and the insufficient base support for clinical programs. We are developing a capital funding plan to address critical infrastructure and equipment deficiencies as well as an operational funding model to ensure that base funding for core programs is sufficient.

Celebrate and preserve OVC's 150-year legacy, including preservation of historic buildings

Throughout 2012, a number of events and activities are being held to engage alumni, faculty, staff, students, and the Guelph community, including the 2012 Global Development Symposium "Critical Links between Human and Animal Health"; events for OVC, alumni, supporters, and the public; and special historical exhibits.

Enhance One Health and Ecosystems Approaches to Global Health

Ecosystems approaches will be used to provide solutions for global human and animal health and food security problems within the broader social and ecological context. In addition to providing learning opportunities for DVM and graduate students, a special program will be developed for student veterinarians who will become rural community veterinarians.

Create a Globally Recognized Model for Integrated Companion Animal Primary Healthcare Learning

This innovative program prepares graduates to incorporate nutrition, communication, rehabilitation, behaviour, welfare, good citizenship, One Health, and research into their veterinary practices, thereby improving patient care, enhancing the client experience and creating added value for their employers. To create a global model, we will establish web-based international learning collaborations and a visiting scholars program.

Ensure safe food and healthy food animals by creating research networks to develop and implement strategies to solve important disease problems and enhance Highly Qualified Personnel (HQP) training

Key animal health problems facing major food animal industries (poultry, dairy, and swine) will be addressed through interdisciplinary research teams (university, industry and government) and training of HQP in disease modeling, risk assessment, risk-based surveillance and spatial/temporal epidemiology. In addition, enhancements will be made to a special program to prepare students for careers in food-animal veterinary medicine.

Create new interdisciplinary clinical areas of focus incorporating learning, discovery and patient healthcare.

The OVC Animal Cancer Centre and the Equine Sports Medicine and Reproduction Centre will open in fall 2012. The Minimally Invasive Procedures Program will be established to develop and evaluate new diagnostic and therapeutic techniques using the smallest possible opening, such as laparoscopy, image guidance and robotics. The Program in Recuperative and Restorative Therapy will provide corrective surgery, rehabilitation, nutritional support, adjunct medical therapy, and pain management.

Ensure DVM Graduates achieve entry-level competencies to meet societal needs for 2015 and beyond

The goal of this initiative is to ensure that our veterinary graduates have acquired the necessary entry-level competencies (skills, knowledge and attitudes) by the time they graduate in order to provide high quality professional services and the capability of lifelong learning.

Enhance Biomedical Translational Research and Training

Translational biomedical research translates fundamental research into practical biomedical applications using interdisciplinary collaborations to improve human and animal health and society. Graduate programs will be enhanced by creating 1) cross-university collaborative intercollegiate graduate programs in cancer biology and in cardiovascular biology; and 2) within the current Masters of Biomedical Sciences program, a Diploma program will be developed to emphasize training in reproductive technology as well as a 'stream' in clinical trials-oriented research. A Clinical Research Program will be established to improve our understanding of disease, develop new tools for diagnosis, and identify novel therapeutic strategies.

UofG Centre for Public Health and Zoonoses (CPHAZ): Establish partnerships through co-location/collaboration with government agencies

Currently, CPHAZ is exploring the possibility of co-locating scientists from local, regional or national public health agencies and organizations with OVC. Sharing of laboratory space and daily contact with government scientists would provide insights into research questions and priorities for government, and create new research opportunities.

UofG Institute for Comparative Cancer Investigation: Facilities for Transformative Cancer Research

The focus of this proposal to the Canada Foundation for Innovation Leading Edge Competition (2012) is translational cancer research, with funding across the university to create unique research facilities that will synergize with existing and growing strengths in cancer research.

UofG Campbell Centre for Study of Animal Welfare: Collaborative Graduate Program in Animal Welfare

A new collaborative MSc and PhD program between OVC and OAC will use interdisciplinary approaches and research methodologies to resolve animal welfare problems.

2012-2017 Ontario Veterinary College Integrated Plan

I. Introduction

The Ontario Veterinary College, founded in 1862, is the oldest veterinary college in Canada and the United States and is celebrating its 150th anniversary in 2012.

One of the founding Colleges of the University of Guelph, the OVC is the only veterinary college in Ontario and is an important part of a highly regarded, comprehensive university, in the most populous region of Canada and in close proximity to numerous medical and agricultural research facilities. Our alumni span the globe, working in universities, private practices, industry, government and other organizations.

The College is focused on improving health – the health of animals, humans and the environment – and is engaged with all animal species. To achieve this vision, the College provides opportunities for learning, research and healthcare.

The OVC's 150th anniversary comes at a critical juncture in our evolution. The anniversary serves as a platform from which to communicate our goal to be a defining voice for veterinary health science in this province, in Canada and beyond. Our vision and mission are clear.

Our Vision

A world leader, integrating animal, human and environmental health through innovation, excellence and societal relevance.

Our Mission

Educate veterinarians and scientists, create new knowledge and provide expert services to improve the health and well-being of animals, people and the environment.

Our Motto

Opus Veterinum Civibus: *The Craft of the Veterinarian is for the Good of the Nation.*

II. Structure and Funding

The College is fully accredited by the Council on Education of the American Veterinary Medical Association (AVMA) and the Canadian Veterinary Medical Association (CVMA), based on annual reports and a comprehensive review every seven years, the next being in February 2016.

Currently OVC has 133 Faculty and Veterinarians, and 201 regular full-time staff, four academic departments (Biomedical Sciences, Clinical Studies, Pathobiology and Population Medicine), the OVC Health Sciences Centre, and the Office of the Dean (Finance, Advancement, Student Liaison, Communications, Administration, OVC Pet Trust, OVC Information Technology Services, and Equine Guelph).

Base funding for the OVC comes from the Ontario Ministry of Training, Colleges and Universities (MTCU) and the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), including the Veterinary Clinical Education Program (VCEP). Research funding is expanding, with external funding from the Natural Sciences and Engineering Research Council (NSERC), the Canadian Institute of Health Research (CIHR), the Canadian Foundation for Innovation (CFI) and the Canada Research Chairs (CRC) program. Other funding comes from industry, including animal health companies and commodity organizations, and from contributions to OVC, OVC Pet Trust Fund, and Equine Guelph.

III. Academic Programs

The OVC has four academic departments (Biomedical Sciences, Clinical Studies, Pathobiology, and Population Medicine) and an innovative four-year professional DVM program (480 student capacity). More than 70 per cent of the successful applicants to the program have completed at least part of their pre-veterinary education at the University of Guelph.

The GDip, MSc, MPH, MBS, PhD and DVSc graduate programs currently have a total of 261 students. In addition, the OVC offers clinical specialists-in-training programs, including one-year internships and clinical training for DVSc graduate students, which meets the education and research requirements for board certification in a variety of clinical specialty colleges.

The OVC also provides essential components of some key University of Guelph undergraduate degree programs. Approximately 637 BSc students are registered in the Biomedical Science program, which is jointly managed by the OVC and the College of Biological Sciences. In addition, OVC faculty participate in the delivery of the interdepartmental Toxicology BSc program with three other colleges. OVC faculty are involved in more than 76 non-DVM undergraduate and graduate course sections; these sections accounted for approximately 3,400 Non-DVM course enrolments in 2010/11.

The Summer Leadership and Research Program, an intensive one-on-one and small group learning experience for approximately 50 veterinary and undergraduate students, is designed to nurture their interests in graduate work and research careers.

The OVC Health Sciences Centre (OVC HSC) provides the learning environment for training veterinarians and veterinary specialists, while offering medical and surgical care for companion and large animals. It is a major window for the community into the work of OVC and the University of Guelph. Approximately 16,000 companion animals, equine, farm animals, and exotic species are treated each year. The Field Service provides primary care for ruminant, poultry and swine on farms throughout the region. The clinical programs help advance the field of veterinary medicine through clinically based research and clinical service. The OVC HSC includes the Specialty Hospital for Companion Animals, the Specialty Hospital for Large Animals, the Hill's Pet Nutrition Primary Healthcare Centre, the Ruminant, Swine and Poultry Field Service and On-Farm Healthcare, the OVC Animal Cancer Centre, and the Equine Sports Medicine and Reproduction Centre.

IV. 2012-2017 Integrated Planning Process

In January 2011, the OVC Dean's Council began the process of Integrated Planning for the next five years through ongoing discussions and updates at Dean's Council (Dean, four associate deans, four department Chairs, Chief Administrative Officer, Chief Financial Officer, Manager of Communications and Public Relations). Full-day facilitated retreats were held on May 16 and 17, 2011, and attended by all members of Dean's Council, Directors of CPHAZ and ICCI, three faculty members from each department and two student veterinarians.

Following the retreat, department Chairs sought feedback from faculty and began working on departmental action plans. On June 14, department Chairs presented their Action Plans to Dean's Council and their written plan was submitted by September 15. On November 8, 15, and 29, Dean's Council continued College Integrated Planning discussions, modifying and validating suggested initiatives. On December 2, a half-day college retreat was held, starting with a community meeting where all initiatives were presented. Students, faculty and staff were invited to attend; participation was enthusiastic and discussion animated. Departments also held retreats in order to continue to develop departmental Action Plans.

The Dean is forming a faculty advisory committee to provide feedback and advice on the strategies and outcomes outlined in the Integrated Plan.

V. Current Academic and Operational Environment and Direction

A. Curriculum Plan

Doctor of Veterinary Medicine (DVM) Program:

The DVM Program is a four-year (30.5 credits) professional degree requiring a minimum of two years of preparatory undergraduate education before admission. The current curriculum, implemented in fall 2000, is undergoing a comprehensive review, as are admission requirements. The review will ensure that our students have the required entry-level competencies at graduation, and will involve updating our curriculum, developing end-of-year objectives for each year of the program and reviewing and refining the learning objectives. As part of our quality improvement process, we conduct several types of outcome assessment, including an annual graduate and employer survey. We will better integrate these assessment processes into ongoing curricular development. At the course level, we are reviewing our allocation of resources (people, animals and funding), including teaching methodologies, to develop efficiencies where possible. This is especially critical in the clinically based courses, which are the most resource-intensive to deliver.

Undergraduate BSc Courses:

Three departments (Biomedical Sciences, Pathobiology, and Population Medicine) deliver 23 undergraduate courses annually, one of which is offered by both in-class and distance education (DE) formats; another is offered only by DE. Several of these courses have proven extremely popular and a few have enrolments of more than 300 students. The demand for these courses has been increasing over the last few years and requires careful resource management. Three more of the highest enrolment undergraduate biomedical sciences courses are being converted to a DE format for next year.

Graduate Programs:

The OVC has introduced two new Master's programs: a coursework Master's in Biomedical Sciences (MBS) and the Master's in Public Health (MPH). In 2011, OVC surpassed graduate student enrolment targets for both master's and doctoral students. In fall 2011, we had 261 graduate students including 150 MSc (up 40% from 2008) and 124 doctoral students (up 42% from 2008).

B. Research Plan

A Strategic Research Plan guides research decision-making at OVC. The plan acknowledges strengths and encourages competitiveness, ensures viability of existing research programs, allows for strategic use of resources, promotes increased research productivity, and provides a framework for growth. Research programs of strength include food animal health management; public health; infectious disease; reproductive and developmental biology; and applied clinical science, including communications and animal welfare. Research programs in cancer and cardiovascular biology are evolving, and emerging programs include stem cell biology/regenerative medicine, hemostasis, minimally invasive techniques, molecular diagnostics and clinical trials. Research chairs include a CRC Tier 1 Chair in Animal Reproductive Biotechnology, Tier II Chairs in Veterinary Pathology and in Zoonotic Diseases and a CIHR Chair in Applied Public Health.

We promote multi-disciplinary research teams targeting practical applications through collaborations with industry and government nationally and internationally. In 2010-11, OVC received \$13M in research funds (up from \$10M in 2005-6) including \$2.2M from industry, \$2.8M in tri-council (NSERC, CIHR) funding, \$2M from non-profit/charitable organizations and \$3.5M from OMAFRA and other ministries. We increased administrative support for faculty by implementing an internal grant review process, holding workshops on Writing Scientific Manuscripts and Research Grant Training, establishing a research website and adding new graduate scholarships. In 2011, new infrastructure and equipment funded by a \$1M grant from the Canada Foundation for Innovation (CFI) New Initiatives Fund (NIF) resulted in a well-equipped research facility for the Centre for Public Health and Zoonoses and 14 CFI Leaders Opportunity Fund (LOF) awards. A CFI Leading Edge Fund (LEF) proposal is under consideration for the Institute for Comparative Cancer Investigation for "Facilities for Transformative Cancer Research."

C. Research and Teaching related to OMAFRA and External Funds

The OMAFRA Veterinary Clinical Education Program (VCEP) is funded by a \$5.2M annual grant designated to provide support for delivery of the clinical training aspects of the DVM curriculum. The funds are designated for salaries; the Veterinary Externship Program, which is a required component of the DVM curriculum; and for Doctor of Veterinary Science (DVSc) stipends (graduate students enrolled in research and speciality clinical training programs). Of the 117 faculty at OVC, 33 are currently involved in research projects associated with the OMAFRA contract.

D. Resource Allocation Plan

Externally Funded Research Positions

The 2012-2017 Integrated Plan includes the possibility of two Industry Research Chairs (poultry, dairy) and one term-limited or endowed Chair (Ecosystems Approaches for Health). The college will collaborate with other colleges to develop CRC proposals within the themes of the BetterPlanet Project.

Fundraising

The College leadership and members of the advancement team actively foster and cultivate relationships by sharing critical information about the college's programs and the people involved in making these programs successful.

A key fundraising priority for OVC is the Animal Cancer Centre (ACC) of the UofG Institute for Comparative Cancer Investigation with a \$15M goal. The OVC Pet Trust Fund has enthusiastically supported the ACC. In addition, fundraising activities are underway for the Equine Sports Medicine and Reproduction Centre (\$1.5M). Other areas where fundraising plans are being developed include the minimally invasive procedures program (\$1M) and the Bovine Education Trust (\$500,000), which will enable veterinary students interested in food animal medicine to learn additional skills. As the new five-year Integrated Plan is operationalized, fundraising plans for new initiatives, such as the Chair in Ecosystems Approaches to Health, will be created.

E. Space Plan and Needs

In 2010, a comprehensive space audit was conducted at the University of Guelph. The results of this audit revealed that, on average, office space for faculty, staff and graduate students and office support space (meeting rooms, file areas, copy rooms, storage rooms, etc.) at the OVC do not exceed the suggested COU space allocation guidelines. Furthermore, research space allocation is below COU space allocation guidelines, but matches the average of all universities across the system in the same research category.

In addition to facilities located within the OVC, faculty, staff and students also use centrally booked facilities in a variety of ways, including the Central Animal Facility for a variety of research programs and projects. Research animals are also housed at Arkell Research Station (swine, poultry, horses), and Elora Research Station (dairy and beef cattle). The abattoir in Animal Poultry Sciences is used by researchers as is the Research Isolation Unit managed by the Office of Research. BSc courses are held across campus in centrally booked lecture rooms or laboratories.

Projects that have been completed since the 2009 Masterplan include the Hill's Pet Nutrition Primary Healthcare Centre (industry donation and provincial funding), the UofG Centre for Public Health and Zoonoses research laboratories and biobanking facility (CFI grant), and the Large Animal Clinical Skills Facility (OMAFRA) and Barn 37 renovations (OVC and donations).

Projects that are in progress include the OVC Animal Cancer Centre (private donations; completion in fall 2012), Equine Sports Medicine and Reproduction Centre (private donations; completion in spring 2012), Restoration of historic front entrance (class gift to be completed by alumni weekend June 2012), and Relocation of Department of Clinical Studies from OVC Health Sciences Centre to vacated space (bequest; college funds; in winter 2012). In addition, the OVC will be a beneficiary of the Dairy

Infrastructure project at the Elora Research Station, which will provide critical teaching and research infrastructure and animal facilities.

Plans have been submitted to CFI for laboratories for the UofG Institute for Comparative Cancer Investigation laboratories and a laboratory for stem cell and regenerative medicine.

Several infrastructure projects are in the planning or discussion stage, including possible co-location of selected government agencies with the UofG Centre for Public Health and Zoonoses and Department of Population Medicine; and improvement of the client services area within the Specialty Hospital for Companion Animals.

Aged facilities, outdated and inadequate equipment, spaces, and an unsustainable operational funding model threatens the OVC's accreditation. In 2009, in response to this threat, OVC prepared a master plan as part of the proposal to Infrastructure Ontario and MTCU for redevelopment and improvement of the OVC campus. This proposal was not approved to go forward using a public-private partnership model. Some parts of the master plan have been completed or initiated by securing other sources of funding. A proposal for MTCU funding to correct the most critical infrastructure deficiency – the Companion Animal Hospital – has been prepared and submitted.

The priority space needs for the college therefore are:

- 1) Providing critical infrastructure to meet requirements for accreditation, including student teaching, patient care and clinical research. The previous accreditation review noted these deficiencies. In particular, new clinical facilities are required for companion animals beyond the level of primary care to replace and expand the clinical space built in the 1950s (including extension of utilities to these new facilities and demolition of the former Veterinary Microbiology and Immunology building).
- 2) To meet accreditation and Animal Care Committee requirements, we need to address biosecurity/ personnel safety; hazardous and animal waste removal; cadaver storage, management for teaching, and disposal; and lack of perimeter security. In addition, adequate pasture and turn-out space for horses is necessary, which could become a major issue over the long term. Currently we depend on the Arkell Research Station, which is owned by the province and may have an uncertain future, for housing for our teaching equine herd. Other needs include paddocks for horses used for research, pasture for a recipient herd for embryo transfer research and service, and space for rehabilitation of equine patients.
- 3) Small group learning spaces for veterinary students and veterinarians and other health professionals.
- 4) Second floor connecting walkways to move people and animals safely and conveniently from one area to another.

VI. Completed Initiatives from 2006-2012 Integrated Plan

Improved learning spaces: New large animal clinical skills building and historic barn renovation:

Supported by OMAFRA, the large animal clinical skills building helps prepare student veterinarians for careers in food animal and rural veterinary practice. The facility provides flexible space for large animal learning labs, allowing students and faculty to use modern technology and animal-handling equipment.

A separate renovation project funded by OVC and donations has improved the barnyard and added 19 box stalls for horses for Barn 37, the last functioning barn on the campus.

Established core imaging facility and equipped picture archival communication system:

Infrastructure for core imaging facilities was completed in the OVC HSC (CT scanner, digital X-ray machine with fluoroscopy, digitizing the nuclear scintigraphy equipment) including a Picture Archiving and Communications System to enable clinicians to easily review and present them to students and clients.

Implemented HSC Medical Information Management System:

The new OVC HSC information system (HSCis) is a comprehensive, integrated, flexible medical information system that supports clinical, teaching, research and business requirements.

Constructed Hill's Pet Nutrition Primary Healthcare Centre:

Opened in 2010, the Hill's Pet Nutrition Primary Healthcare Centre provides hands-on learning experiences for veterinary students during all four years of their curriculum.

Relocated human anatomy to renovated facilities at OVC in collaboration with the College of Biological Science:

The CBS Human Anatomy program moved to renovated space adjacent to the OVC Comparative Anatomy Program, providing space better suited for the health and safety needs of human anatomy teaching and collaborations with the OVC comparative anatomists.

Built and equipped Pathobiology and Animal Health Laboratory Building:

The Pathobiology and Animal Health Laboratory Building enhances Canada's capacity to prevent diseases and solve health problems at the human-animal interface. The federal and provincial governments as well as the university and other partners supported construction of the \$70-million facility.

Built and equipped Large Animal Isolation Unit (LAIU):

The LAIU provides clinical facilities to safely manage large animals with infectious diseases. (Funded by the federal government)

Created University of Guelph Centre for Public Health and Zoonoses, with renovated office and laboratory facilities:

The Centre for Public Health and Zoonoses (CPHAZ) embodies the growing role of veterinarians in public health, expands Canada's capacity to solve problems affecting animal, human and environmental health, and involves more than 40 university scientists as well as government and industry collaborators. The college renovated office space in the McNabb House for CPHAZ faculty and MPH graduate students. Funding from CFI has provided laboratories in renovated Animal Health Lab space and equipment and also a "supercomputer" for disease monitoring and surveillance in the Department of Math and Statistics in the College of Physical and Engineering Sciences.

Implemented Masters in Public Health:

The MPH program is a five-semester professional degree program with concentration in epidemiology, environmental public health, infectious diseases including zoonotic, food borne and waterborne diseases, and features a unique four-month practicum experience. The third cohort of students started

in fall 2011 (179 applications were received for 20 positions). Graduates are now working in public health careers at the local, provincial, national and international level.

Created University of Guelph Institute of Comparative Cancer Investigation:

The Institute of Comparative Cancer Investigation (ICCI) builds upon the university's expertise in basic cancer biology and veterinary medicine to take an integrated approach to cancer studies that lead to evidence-based discoveries which benefit both people and animals. The Institute also trains future scientists and veterinary cancer specialists. A key component of this groundbreaking initiative is the establishment of the OVC Animal Cancer Centre.

VII. 2012-2017 OVC Integrated Plan – Continuing and New Initiatives

Proposals and initiatives for the OVC Integrated Plan are presented here in terms of how they relate to the categories in The Better Planet Project: Community, Food, and Health.

The BetterPlanet Project: Community

“The BetterPlanet Project will improve the lives of Guelph students and motivate them to help the University improve the quality of life for people everywhere. “

1. Ensure that OVC Remains Accredited by Addressing Deficiencies in Infrastructure and Equipment and Stabilizing Finances

Veterinary Colleges in Canada are accredited by the American Veterinary Medical Association (AVMA) and the Canadian Veterinary Medical Association (CVMA). As a fully-accredited school, our students can take the North American Veterinary Licensing Examination during their final year and then take the Ontario and other provincial and state licensing examinations as soon as they graduate. Without this license they cannot work as practicing veterinarians anywhere in Canada or the US. Thus, maintaining accreditation with our next review in February 2016 is crucial to the ongoing viability of the OVC.

During the last accreditation review, we aimed to address OVC's outdated and insufficient clinical facilities and equipment for teaching, research and healthcare through implementation of the infrastructure master plan that we had prepared for the Infrastructure Ontario/Ministry of Training, Colleges, and Universities proposal for the alternative financing program; however it was learned in 2011 that the IO/MTCU proposal would not be going forward, which means that problems remain related to inadequate clinical facilities, particularly for companion animal programs beyond the primary healthcare level, and equipment in both the large animal and companion animal hospitals.

The other significant concern highlighted by the AVMA/CVMA site visit team was insufficient base support for clinical programs in the face of rising costs, static or declining budget allocations, and variable client revenue.

We are developing plans to address these problems and explore all options to ensure that the OVC

remains an accredited college, including a capital funding plan to address critical infrastructure and equipment deficiencies and an operational funding model to ensure that funding, especially for clinical programs, is sufficient. Once the governmental framework on tuition is presented, we will explore the potential for tuition revenue to be reinvested into programs. Currently, the OVC has the second lowest tuition in Canada and the United States (domestic tuition at Canadian veterinary schools: Alberta \$10,566, Prince Edward Island \$9,722, Saskatchewan \$7,020, Ontario \$6,676, Quebec \$3,033; and at comparator US schools: Ohio State \$27,135, Cornell \$28,400, Michigan State \$24,780). We will also explore the possibility of increasing enrolment numbers within 5-10 years.

2. Celebrate and preserve OVC's 150-year legacy, including preservation of historic buildings

In 2012, OVC is celebrating our 150-year legacy with a number of events and activities to engage alumni, faculty, staff, students, and the Guelph community in the celebration. Highlights include: 1) The 2012 Global Development Symposium "Critical Links between Human and Animal Health," which will explore interdisciplinary approaches to improving public health and food security, while empowering communities for lasting change; 2) Three commemorative books; 3) Events for OVC staff, faculty, students, alumni, supporters, and the public; 4) Several historical exhibits for the Guelph Civic Museum, UofG archives and other exhibitions; 5) A class gift is being used to renovate and restore the entrance to the Main Building and adjacent public space.

3. Enhance One Health and Ecosystems Approaches to Global Health

Researchers will incorporate ecosystems approaches to understand and promote animal and human health within the broader social and ecological context. This initiative will provide solutions for global health and food security problems and also increase research and learning opportunities about this approach in the DVM program and at the graduate level. This interdisciplinary research will be conducted by OVC faculty and other researchers from across campus, in medicine and public health, and in government and non-governmental organizations in Canada and internationally. In addition, an enhanced program will be developed for student veterinarians who are focusing on becoming rural community veterinarians within Ontario, Canada or internationally, and will include mentoring by rural veterinary practitioners, as well as courses in leadership, One Health, and community development.

4. Create a Globally Recognized Model for Integrated Companion Animal Primary Healthcare Learning

Within the overarching objective of preventing disease and safeguarding health, the experiential curriculum of the integrated primary healthcare program includes nutrition, communication, rehabilitation, behaviour, welfare, good citizenship, One Health, and research. This innovative program prepares graduates to introduce these programs into the veterinary practices where they will work, thereby improving patient care, enhancing the client experience and creating added value for their employers. Our goal for this integrated program is to be recognized as the standard by which companion animal primary healthcare learning and service delivery is measured.

Based on this model, we will create an International Program in Companion Animal Primary Healthcare by the end of 2014, with two main objectives: 1) establish web-based learning collaborations between our students and students at veterinary schools in other countries; and 2) create a learning program within the Primary Healthcare Centre (PHC) for visiting scholars and students.

The BetterPlanet Project: Food

“The BetterPlanet Project will increase understanding of food-related issues and help ensure an abundance of healthful food choices for Canadians and for the world.”

5. Ensure safe food and healthy food animals by creating research networks to develop and implement strategies to solve important disease problems and enhance Highly Qualified Personnel (HQP) training

Key animal health problems facing major food animal industries will be addressed through research addressing detection, prevention, surveillance, eradication and biosecurity with the goal of increasing export markets and strengthening the agricultural sector. In addition to faculty in Pathobiology, Population Medicine, Animal and Poultry Science, Mathematics and Statistics, researchers from government, industry and other veterinary colleges will be involved in interdisciplinary teams. Building on our strengths, advanced research and training of HQP will be conducted in disease modeling, risk assessment, risk-based surveillance and spatial/temporal epidemiology. Through increased interaction with government scientists and policy makers, relevant research will be applied to real-life problems, providing critical answers for policy decisions related to disease control and surveillance.

The research networks will include the Poultry Health Research Network, the Dairy Health Research Network and the Swine Health Research Network.

5.1 Poultry Health Research Network

The goal of the Poultry Health Research Network is to ensure long-term competitiveness for the Canadian poultry industry and quality products for global markets by finding solutions for the most important threats to the poultry industry. The Network will focus on infectious diseases, vaccine development, antimicrobial resistance, more efficient disease diagnosis, improved disease control strategies, and environmental and welfare concerns. Researchers from across the university, the Animal Health Laboratory, the Public Health Agency of Canada, the Ontario Ministry of Agriculture, Food and Rural Affairs, and poultry industry organizations including the Poultry Industry Council and the Canadian Poultry Research Council, will collaborate. A Pathobiology faculty member who is an expert in avian virology and immunology will be put forward for an Industrial Research Chair. In addition, Pathobiology has committed an open faculty position for an avian scientist. A steering group with representatives from the various stakeholders will establish goals for large collaborative multi-disciplinary projects. The network will identify and secure new funding sources to leverage funds from industry and government, and considerable growth in graduate training programs is anticipated. The long-term goal is to establish a unique world-class network of poultry researchers to address problems ranging from very basic biological processes to environmental concerns.

5.2 Dairy Health Research Network

Expanding on a solid record of international-calibre research supported by the dairy industry, this initiative will make major research advances and train HQP needed to protect the health of the Canadian dairy herd. This support will be leveraged through opportunities such as an NSERC Industrial Senior Research Chair with emphasis on surveillance and control of endemic diseases of significance to the dairy industry. This key position, which will increase the critical mass of

university faculty doing dairy research, will drive new research initiatives in support of our programs, enhancing the reputation of the university. Research and training programs in dairy health management will be expanded, incorporating core initiatives in animal health surveillance and disease control, and taking advantage of new dairy research facilities at the Elora Research Station. This initiative will enhance our ability to recruit the most highly qualified domestic and international graduate students to conduct world class research in dairy cattle health, and generate new research funds from national, provincial and industry funding sources, thus increasing productivity and generating overhead in support of our research infrastructure.

5.3 Swine Health Research Network

Emphasizing surveillance and control of endemic diseases of significance to the swine industry, this initiative will help protect the domestic and export market for the swine industry by controlling infectious diseases and ensuring efficient and humane production. Augmenting strong support from the swine industry for research of international calibre, research programs in swine health management will incorporate animal health surveillance and disease control. Building a collaborative network of university, industry and government researchers, capacity will be enhanced to capitalize on opportunities for research and training of HQP in emerging areas such as surveillance, biosecurity, risk assessment and infectious disease modeling. The Canadian swine industry will benefit from this initiative through the eradication and control of key production diseases in specific geographic areas of the country, reducing the financial impact of these diseases, and ensuring the long-term sustainability of the swine industry.

5.4 Food-Animal Veterinary Medicine

We will enhance the program for students interested in careers in food-animal veterinary medicine, to ensure that there are sufficient veterinarians with the knowledge and skills to meet the needs of food animal industries and research, and that these veterinarians will have a strong commitment to their careers as food animal veterinarians. Components of this program will include early identification and a separate admissions process for these students; expansion of the food animal summer experience program; and provision of economics and business workshops. We will align faculty as required to support this initiative and will complete the fundraising for the Bovine Education Trust to support enrichment activities for these students.

The BetterPlanet Project: Health

“The BetterPlanet Project will improve the health of animals in our care and the prospects for human health, here and around the world.”

6. Create new interdisciplinary clinical areas of focus incorporating learning, discovery and patient healthcare

The Health Sciences Centre gives students opportunities for hands-on learning in diagnosing and treating patients and provides research opportunities and quality healthcare to patients.

6.1 OVC Animal Cancer Centre

The OVC Animal Cancer Centre will be a world-class facility that will improve cancer care for companion animals, promote interdisciplinary cancer research and train future generations of cancer-care specialists and scientists in a clinical setting. New and renovated facilities will be completed in fall 2012 and will offer the latest diagnostic and treatment procedures, including radiation therapy using a linear accelerator. Success for this initiative depends on providing exceptional patient care, efficient service delivery, and using research findings to advance cancer care for animals and people.

6.2 Equine Sports Medicine and Reproduction Centre

With more than 380,000 horses in the Ontario greenbelt, the fourth largest racing jurisdiction in North America and the growth in performance horse events, the Equine Sports Medicine and Reproduction Centre will highlight and enhance our expertise in the diagnosis and treatment of performance-limiting problems and reproductive difficulties. The Centre will provide direct access to OVC specialists with a focus on service to owners, trainers and veterinarians. Research will solve critical problems in performance and reproduction and an increased outpatient caseload will provide learning opportunities for our students. This financially self-sustaining facility will open in June 2012 with a particular focus on lameness evaluation, cardiorespiratory evaluation and equine reproduction, providing answers to important problems facing the equine industry.

6.3 Minimally Invasive Procedures Program

This program will be created within the OVC Health Sciences Centre where new diagnostic and therapeutic modalities will be developed, scientifically evaluated and used to provide healthcare for our patients. Keyhole biopsies, kidney and bladder stone removal, prevention of gastric torsion and correction of strictures are some of the procedures that will be available. Improved patient outcomes, minimized patient discomfort and reduced recovery times are anticipated in addition to collaborative opportunities for research using naturally occurring diseases in animals as models for the use of minimally invasive procedures in humans.

6.4 The Program in Recuperative and Restorative Therapy

Research and medical and physical therapies will be developed for chronic conditions and diseases. Long-term management of patients will include corrective surgery, rehabilitation, nutritional support, adjunct medical therapy, and pain management. Student veterinarians and graduate students will have increased educational and research opportunities which will improve the overall delivery of health care to patients in the future.

7. Ensure DVM Graduates achieve entry-level competencies to meet societal needs for 2015 and beyond

The goal of this initiative is to ensure that our veterinary graduates have acquired the necessary entry-level competencies (skills, knowledge and attitudes) by the time they graduate in order to provide high quality professional services and the capability of lifelong learning. A comprehensive review of the DVM program including admissions, learning objectives and outcome assessment is being conducted. Based on the results of this review, clearly defined learning outcomes will be articulated for all levels of the program and individual courses will be aligned to meet these expectations. Methodologies to augment learning will be identified and implemented, providing opportunities for students to develop, refine and

master the competencies during the four years of the program. Examples include digital technologies for increased self-directed learning and simulation models to enhance psychomotor skills development. Multi-year themes that span the curriculum such as animal welfare and ecosystems approaches to health will be introduced. Allocation of resources (people, animals, and budget) will support effective and efficient delivery of the program. As a result of this initiative, our graduating veterinarians will be more confident and able to add more value to the institutions, businesses and organizations that they join.

8. Enhance Biomedical Translational Research and Training

Translational biomedical research translates fundamental research into practical biomedical applications using interdisciplinary collaborations to improve human and animal health and society.

Graduate programs will be enhanced by creating 1) cross-university collaborative intercollegiate graduate programs in cancer biology and in cardiovascular biology; and 2) within the current Masters of Biomedical Sciences program, a Diploma program will be developed to emphasize training in reproductive technology as well as a 'stream' in clinical trials-oriented research. A Clinical Research Program will be established to improve our understanding of disease, develop new tools for diagnosis, and identify novel therapeutic strategies.

8.1 Develop collaborative intercollegiate graduate programs in cancer biology and in cardiovascular biology

The creation of the Institute of Comparative Cancer Investigation (ICCI) fostered increased collaborative research in cancer biology. At the same time, interdisciplinary studies in cardiovascular biology were increasing. As a result, research links have been built across campus, notably with faculty in the College of Biological Sciences. The opportunity now exists to create collaborative intercollegiate graduate programs in both of these areas, leading to increased training of scientists in these fields.

8.2 Emphasize reproductive technology and participation in clinical trials research within the Masters in Biomedical Sciences

Translational research at OVC offers opportunities for graduate training that may be insufficient or inappropriate for conventional thesis-based degrees, but are ideal for students engaged in our course-based Masters in Biomedical Sciences (MBS). A "stream" in the current MBS program emphasizes training in reproductive technology, qualifying graduates of this program for jobs in the Assisted Reproductive Technologies field. We propose to develop a Diploma program that would be attractive to medical residents, MSc and PhD students from other universities and medical schools in Ontario and abroad, and which would use some of the courses from the MBS. Participation in clinical trials-oriented research, as a way of fulfilling the research project requirement of their degree, would offer the opportunity for students in the MBS program to learn skills that would enhance their chances of finding employment in the pharmaceutical or other healthcare industries after graduation. In addition, development of such a program could provide additional resources to enhance clinical trial development at the OVC.

8.3 Enhance Clinical Research

Increased clinical research will improve our understanding of the causes and mechanisms of disease and allow us to develop new tools for determining diagnosis and prognosis and to identify novel therapeutic strategies. The current expertise in conducting food animal field trials can be used to help us expand capacity for clinical research studies in companion animals. Clinical trials are key to the mandate of the Institute for Comparative Cancer Investigation and will also nurture emerging research areas including Biomarkers for Enhanced Animal Health, the Minimally Invasive Procedures Program, The Program in Recuperative and Restorative Therapy and the Hemostasis Research Program. To develop this program, we would use focus groups to identify knowledge gaps and opportunities, consult with veterinary colleges with established clinical trial programs, and develop collaborative research teams with complementary expertise and partner with the UG Animal Health Laboratory. Keys to success include a network of clinical trial collaborators, expediting the research approval process (e.g. contracts and AUPs), improving information management (e.g. patient recruitment, standardized forms and operating procedures) enhancing operational aspects (e.g. sample collection and management, reporting) and identifying projects and sources of funding. This initiative will increase hospital caseload, expand collaborative relationships with stakeholder groups from industry, government and the donating public, and will distinguish the OVC HSC as a major contributor of translational clinical research.

9. UG Centre for Public Health and Zoonoses: Establish partnerships through co-location/collaboration with government agencies

The UofG Centre for Public Health and Zoonoses (CPHAZ) provides a coordinating and leadership role for existing and new public health initiatives in research, teaching, and knowledge translation. Members of CPHAZ are faculty and graduate students in departments throughout the University of Guelph and in public health organizations. In December 2011, CPHAZ officially opened a research facility in the OVC that includes laboratory space and equipment to support public health research from the molecular level to the population level. The CPHAZ laboratories are a shared resource for CPHAZ members and their collaborators and are available for short-term and longer-term projects where specialized equipment is required. Currently, we are exploring the possibility of co-locating scientists from local, regional or national public health agencies and organizations with OVC. Sharing of laboratory space and daily contact with government scientists would increase interaction among scientists from different backgrounds, provide insights into research questions and priorities for government, and potentially create new research opportunities.

10. UG Institute for Comparative Cancer Investigation: Facilities for Transformative Cancer Research

A \$2.6M notice of intent application has been submitted to the Canada Foundation for Innovation Leading Edge Competition (2012). The application focuses on cancer, with a request for funds to create unique research facilities that will synergize with our existing and growing strengths across the university in cancer research. At the University of Guelph, our cancer researchers investigate naturally occurring tumours in companion and farm animals (as well as rodents) because these are excellent models of human disease. The requested infrastructure will provide us with opportunities for new discoveries about this disease that are unmatched anywhere else. At Guelph, we have a unique team of

basic cancer scientists, clinical researchers, and practicing oncologists who will use this new infrastructure to discover, develop, and test new cancer therapies, generate new early detection tools, and strengthen cancer prevention in a "molecules to bedside" approach.

The focus of the request, translational cancer research, is an area in which Canada can be a world leader. We have established collaborative links with numerous academic and health-related biotechnology companies eager to evaluate their diagnostic and therapeutic agents in animal models of cancer. Collaboration with public and private sector partners will lead to knowledge transfer to the bio- and pharmaceutical industry. We have also joined the Comparative Oncology Trials Consortium (COTC) of the USA National Cancer Institute. This network links industry and 19 other North American veterinary schools for the purpose of performing clinical trials of anti-cancer therapies on naturally occurring disease in companion animals (dogs and cats). The University of Guelph is the only non-USA member. Innovative technology for cancer diagnosis and treatment developed here will improve the return on venture capital for investors. Society as a whole will benefit from better understanding of the causes and consequences of cancer leading to improved human health and well-being. More specifically, the power of translational cancer research using robust models for early detection and therapy will transform our understanding of this disease, leading to improved efficiency in cancer treatment for people, resulting in savings of both lives and health care dollars.

11. UG Campbell Centre for Study of Animal Welfare: Collaborative Graduate Program in Animal Welfare

A new collaborative MSc and PhD program between OVC and the Ontario Agricultural College (OAC) will use interdisciplinary approaches and research methodologies to resolve animal welfare problems. This initiative will support the reputation of the University of Guelph as a leader in animal welfare education and research. Once the program is established, animal welfare faculty at OVC will be able to supervise MSc and PhD students studying animal welfare, which will help expand welfare research at the university and attract additional funding for successful interdisciplinary research approaches to welfare.

This program will build on our current course offerings in APS and our critical mass of core faculty in animal welfare science across the university. This collaborative program will offer further growth and sustainability of the graduate program in animal welfare in both OVC and OAC.

VIII. Integrated Plan Assessment Methodology

In 2005, we identified the need for a central repository of data which senior management team members and staff could access for quicker, efficient reporting, planning and decision-making support. This requirement arose from the increased accountability the OVC has both to the AVMA/CVMA for accreditation and the province, donors, and sponsors for funding support. Internally, we recognized the need to access and analyze data so we can make informed decisions.

Business Intelligence (BI) applications facilitate gathering, storing, analyzing and access to data from multiple, disparate sources. Numerous universities including Toronto, McMaster, University of Michigan and University of Florida, have already invested in BI as an institution-wide management strategy.

In 2009, we began Phase 1 of the college's BI project with the Hospital Data Repository (DR), focused on the OVC HSC. Phase 2 of this project is to broaden the capability out to the entire college as both a key management strategy and a technology solution. We will include data from a variety of sources including: human resources, finance, curriculum, research, students (undergraduate and graduate enrolment, demographics, post-graduate survey data), and Alumni and OVC Advancement Support. A formal schedule of reporting dates will be compiled shortly along with a tool kit (e.g. Annual Report template) to facilitate progress updates both to Dean's Council and the OVC and University of Guelph communities. The Business Intelligence project will allow the leaders of initiatives to report back to Dean's Council on progress of initiatives in a consistent manner thereby enabling us to measure progress, challenges and success.

<p style="text-align: center;">University of Guelph</p> <p style="text-align: center;">Integrated Planning Matrix</p> <p style="text-align: center;">Ontario Veterinary College</p>			Mandate											
			Teaching and Learning			Knowledge Creation, Mobilization & Transfer				Engagement – Global and Local				
			Innovation of Curriculum	Supportive Learning	Effective Teaching Practices	Improving research	Strengthening graduate	Strategic external partnerships	Enhancing Global Partnership	Building community	Fostering students engagement			
Goals														
Strategic Areas	Health	1. Create new interdisciplinary clinical areas of focus incorporating learning, discovery and patient healthcare	√	√	√	√	√	√			√	√		
		2. Ensure DVM graduates achieve entry-level competencies to meet societal needs for 2015 and beyond	√	√	√	√					√	√		
		3. Enhance biomedical translational research and training	√	√	√	√	√				√	√		
		4. UG Centre for Public Health and Zoonoses (CPHAZ): Establish partnerships through co-location/collaboration with government agencies		√		√	√	√		√	√			
		5. UG Institute for Comparative Cancer Investigation: Facilities for transformative cancer research		√		√	√	√		√	√	√		
		6. UG Campbell Centre for the Study of Animal Welfare: Collaborative Graduate Program in Animal Welfare	√	√		√	√	√						

	Communities	1.	Ensure the OVC remains accredited by addressing deficiencies in infrastructure and equipment and stabilizing finances	√	√	√				√			√		
		2.	Celebrate and preserve OVC's 150 year legacy, including preservation of historic buildings	√	√	√		√	√	√		√		√	
		3.	Enhance one health and ecosystems approaches to global health	√	√	√		√	√	√		√	√	√	
		4.	Create a globally recognized model for integrated companion animal primary healthcare learning	√	√	√		√	√	√		√	√	√	
	Environment	1.													
		2.													
		3.													
		4.													
		5.													
	Food	1.	Ensure safe food and healthy food animals by creating research networks to develop and implement strategies to solve important disease problems and enhance highly qualified personnel (HQP) training		√			√	√	√		√	√	√	