

## Concept Paper

### **Goal 4: Advance the health and well-being of animals, people, and the environment in California and around the world.**

**Background:** The UC Davis School of Veterinary Medicine (SVM) is deeply committed to Goal 4 and has strategically strengthened our efforts in advancing the health and welfare of animals, people, and the environment through strong leadership and transdisciplinary collaborations across the School, campus, UC system, nation and the world. Core to the SVM's success to date are our foundational programs below:

[Veterinary Medical Teaching Hospital \(VMTH\)](#) - The role of the VMTH and clinical programs are described in detail under Goal 3 and on the VMTH website.

[Veterinary Medicine Teaching and Research Center \(VMTRC\)](#) - The VMTRC, located in Tulare, provides academic instruction, research and outreach that benefits the California dairy industry as well as the local community in the central valley. The VMTRC contributes to research as well as on-farm clinical training for the next generation of veterinarians in dairy production medicine to enhance dairy cattle health and welfare.

[California Animal Health and Food Safety System \(CAHFS\)](#) - The CAHFS is the backbone of California's early warning system that helps protect our state's livestock and poultry. CAHFS serves the people of California by safeguarding public health with rapid and reliable diagnoses for animal diseases including zoonoses that affect humans. CAHFS also serves the equine industries by providing high-quality drug testing and pharmacology programs. CAHFS faculty all have departmental appointments in the SVM and contribute to the SVM's educational mission and research that benefits the livestock and poultry industries throughout California.

[Veterinary Medicine Extension](#) – SVM faculty with appointments in Cooperative Extension (part of the [UC Division of Agriculture and Natural Resources](#)) focus on finding science-based solutions to problems that threaten the vitality of California's animal industries. Through research, outreach and education, county-based advisors and university based cooperative extension specialists throughout the state help provide the vital link between science and industry that benefits the well-being of animals, humans and the environment.

While the contributions of these core programs are vast, highlights include:

- The identification and pursuit of faculty recruitments within these programs and the departments which align with societal needs in the areas of clinical medicine, comparative research, infectious and zoonotic disease epidemiology, animal agriculture, food safety, manure management and vector-borne disease control.
- In 2015, CAHFS, in partnership with the California Department of Food and Agriculture, was instrumentally responsible for the early detection and successful

response to 2 incursions of highly pathogenic avian influenza (HPAI) in the CA central valley. This early detection enabled a swift and successful response that limited losses only to those 2 farms in California. While nationwide, challenges with delayed diagnosis resulted in 20 infected states in the Midwest, > 50 million birds destroyed at an estimated control cost of 1.2 billion dollars and the imposition of prolonged trade restrictions.

Faculty and staff in the core facilities and programs above have served as a base, along with the academic departments, for countless successful collaborations within the SVM, across the UC Davis campus, within the UC system and with other academic and governmental institutions, both in the USA and globally, to address Goal 4. Examples of successful Centers based on collaborations between the SVM and the Schools of Medicine at UC Davis and UC San Diego, as well as with faculty across our campus include:

[Center for Comparative Medicine](#) (CCM)- The research mission of this interdisciplinary comparative medical research and teaching center is to investigate the pathogenesis of human disease, using experimental animal models and naturally occurring animal diseases.

[California National Primate Research Center](#) (CNPRC)- As part of the National Primate Research Centers Program at the National Institutes of Health, the CNPRC conducts research that is leading to new diagnostics, therapeutics, and clinical procedures that enhance quality of life for both humans and animals.

[Comparative Cancer Center](#) (CCC) specializes in the diagnosis, treatment, and clinical care of animals with cancer.

[University of California Veterinary Medical Center - San Diego](#), Associated with the VMTH, this specialty referral center has 5 faculty, 9 staff and a clinical fellow who together work closely with local veterinarians to provide high quality, specialized services in cardiology, nephrology/urology/hemodialysis, and clinical pharmacy to 4,000 patients each year. The Center's mission is to discover, apply and disseminate new knowledge to promote animal health and welfare, and to advance the diagnosis, treatment, control and prevention of animal diseases.

Other important collaborative centers at UC Davis to which the SVM contributes significantly include:

[Center for Environmental & Occupational Health](#) – COEH

[Clinical and Translational Science Center](#) – CTSC

[Center for Children's Environmental Health](#) – CCEH

[Food Animal Residue Avoidance Databank](#) – FARAD

In addition to the centers above and core programs, the ability of the SVM to fulfill Goal 4 has in large part been supported by the outstanding efforts of institutions and centers within the SVM which were created primarily to augment the School's ability to:

- Promote and support faculty collaboration around important issues/needs/challenges
- Connect and respond to stakeholders at the state, national and global level
- Increase and expand access to new and/or specific funding sources

These institutes and centers are primarily lead and supported by their affiliated SVM faculty and in most cases are self-supported by grants, contracts, fee for service and philanthropic sources. They include:

[One Health Institute](#) – OHI

[Karen C. Drayer Wildlife Health Center](#) - WHC

[Western Institute for Food Safety and Security](#) – WIFSS

[Center for Food Animal Health](#) – CFAH

[Center for Animal Disease Modeling and Surveillance](#) – CADMS

[Center for Vector Borne Disease](#) – CVEC

[Veterinary Center for Clinical Trials](#) - VCCT

[Center for Companion Animal Health](#) – CCAH

[Center for Equine Health](#) – CEH

[Veterinary Genetics Laboratory](#) – VGL

[Center for Companion Animal Behavior](#) – CCAB

[International Animal Welfare Training Institute](#)

[Veterinary Institute for Regenerative Cures \(VIRC\)](#)

As the world leader in veterinary medicine, many of the institutes and centers above have global connections and impacts. Two examples of programs that have been established within the past 5-10 years that illustrate the SVM's expanding global engagement in response to emerging challenges, as well as the commitment of our faculty and students to Goal 4, are the [PREDICT Program](#) and the [UC Global Health Institute's Planetary Health Center of Expertise](#) which are both located within the One Health Institute. In 2014, the [Office for Global Programs](#) was created with its mission to promote, facilitate and support global programs of faculty and students within the SVM that advance the health of animals, people and the environment. In addition to providing funding for SVM student externships and research internationally the office supports safety/security and intercultural awareness competency training.

#### **Lessons Learned Relative to Addressing Goal 4:**

- Animal and human well-being, and environmental sustainability and resilience, are inextricably connected.

- The SVM needs to be flexible and responsive to society's needs.
- Actions taken and events that occur in California have global impacts and vice versa. The distinction between local and global programs and impacts is no longer clearly delineated.
- Leadership in advancing veterinary medicine necessitates a global perspective and both local and global engagement to improve health and well being of animals, humans and their shared environments.
- Advancing human well-being must start with, and be supportive of, the well being of our faculty, staff and students.
- Awareness of diversity and cultural differences, both locally and globally, is essential to maintain and improve the well being of our faculty, staff and students.

### **National/External Trends:**

- Political polarization, uncertainty or hostilities at the state, national, and/or global levels will pose potential challenges to the SVM and society. Collective awareness, compassionate understanding and coordination within the School's community and with our partners will be required to address these challenges appropriately and plan for the future.
- The danger that nonevidence-based public perceptions may drive policy at the state, national and/or global levels poses a challenge and potential threat to the SVM, our profession and the communities we serve.
- Financial instability associated with shifts in political priorities nationally will require the identification of new and diverse funding sources to support research, education and programmatic development if the SVM is to continue impactfully addressing Goal 4.
- There is worldwide recognition of the One Health approach as a practical, integrated strategy to address important global issues, such as emerging pandemics, food safety and security and vector-transmitted and water-borne infectious diseases.
- Collaboration is becoming a common practice for team-learning and research success. The diversity (background, discipline, perspectives, etc.) that can contribute significantly to innovation and outcomes may also pose challenges that require new approaches to improve awareness, understanding and dialogue.

### **Strategic Themes:**

- Stakeholder engagement in dialogue early and often is essential to best understand the ongoing and emerging needs and challenges to be addressed by the School.
- The ability to understand societal needs, effectively communicate professional knowledge and translate science for the public and decision-makers is essential to expand awareness of the School's commitment and contributions to Goal 4.

- As animals, society, and the environment continue to be threatened by emerging and re-emerging infectious disease and natural disasters, proactive planning and preparation to engage stakeholders and position the SVM as a local and global leader in prevention, identification, response and recovery from such critical events will be key to continued SVM success in protecting the health and welfare of animals, people and the environment.
- Collaborative efforts within and beyond the School and campus should be encouraged and facilitated as these can create new opportunities, expand visibility, and increase impacts.

### **Options:**

The research portfolio of the SVM is large and diverse. Some would argue that this diversity is a distraction and the SVM should 'focus' its efforts more narrowly. By contrast, others point to the engagement of our entrepreneurial faculty in the efforts described in the Background section of the document as a strength of the SVM and evidence of our commitment to addressing society's needs and Goal 4, as well as assuming a global leadership role in veterinary research and education. If a more limited focused approach is essential, what efforts should be terminated and which should be promoted? What impact would those changes have on the SVM (our students, staff and faculty as well as the School) and our ability to address Goal 4? If the SVM's efforts, with this diverse portfolio, has merit and is appropriately aligned with our Strategic Plan in support of Goal 4, how can we best strengthen our efforts for the greatest impact and benefit?

### **Projected Costs:**

Costs would be determined based on specific programs and their goals, and would be shared or supported by key partners, grants/contracts and/or philanthropic funding sources.

### **Short and Long-term Plans:**

The SVM welcomes input from our internal and external stakeholders as we undertake this visioning and strategic planning process. However, our initial Goal 4-focused faculty would at this stage like to see the following recommendations considered in those discussions:

- Translating science to public audiences and policy decision makers in ways that will allow for dialogue, better informed decisions, and an improved understanding of how the veterinary profession can contribute across multiple sectors will be critical to the SVM and our success in achieving Goal 4. All faculty and selected (based on relevance and interest) staff should be provided training in how to most effectively translate/communicate their professional and scientific knowledge to diverse audiences. Professional and graduate students in the SVM would also benefit from this training.

- The societal and economic impact of the SVM's programs, including the research and service contributions of our centers and institutes, should be documented and widely, effectively publized at the local, national and global level. These impacts should be acknowledged as important metrics to demonstrate the commitment of our School and profession to Goal 4 and the critical relevance of our professional training of students at both the professional and graduate level and our scientific research.
- Collaborative research efforts have proven to be uniquely effective in addressing complex and challenging problems. However, collaboration requires encouragement, facilitation and support within the SVM, across the UC Davis campus (with other schools and colleges) and the UC system, including the Division of Agriculture and Natural Sciences. It will be particularly important for the SVM to encourage and support collaboration amongst junior faculty, as well as between clinical, paraclinical, and non-clinical faculty.
- Careful consideration should be given to ensure the engagement of potential as well as established stakeholders to ensure the relevance of the SVM's programs in addressing Goal 4. For example, under- represented and rural communities are important constituents that SVM faculty and students should include in outreach and stakeholder engagement.
- Inclusion of global intercultural awareness competencies into the SVM curriculum would provide all students with an opportunity to learn cultural understanding and communication skills that would better prepare them for their future careers in a global world.
- In addition to the external challenges we face, the well-being of the SVM community (faculty, staff and students) is under constant challenge. As an educational institution, the SVM must nurture dialogue, shared leadership, and care for both human and animal well-being within our own community. Every member of our SVM community should feel welcome, supported and an important part of the School.