

Concept Paper:

Goal 3: Provide cutting-edge clinical programs that support education, research and service

Background: A cutting-edge clinical program, provided through services offered to the public at the Veterinary Medical Teaching Hospital (VMTH) and its satellites, is one of the most important components of the UC Davis School of Veterinary Medicine (SVM) and the most visible. With world-renowned, clinical specialty experts as faculty, the VMTH is one of the premiere veterinary hospitals in the world. The VMTH currently sees an annual caseload of approximately 50,000 patients – ranging from dogs and cats to horses, livestock and exotic species (i.e., birds, reptiles, fish and other species). This patient volume is larger than any other teaching hospital in the country, and is also one of the largest caseloads in the world compared to private hospitals. The VMTH serves as the primary place of training for our fourth year veterinary students through clinical rotations and case management. The VMTH also has the largest house officer (i.e., residents) training program in the country. There are currently ~115 residents, fellows and interns training in 34 specialty disciplines. Training programs are 1- to 4-year advanced programs that serve as the basis for veterinarians seeking to be specialists (board certified) in a particular area of veterinary medicine. In 1990, the VMTH opened the first veterinary hemodialysis unit, and this has led to the formation of the world's largest program in renal medicine and blood purification. In 2002, the service expanded to a satellite facility in San Diego, which also offers cardiology and pharmacy services. The School expanded in the Central Valley in the mid-1980's to form the Veterinary Medicine Research and Teaching Center (VMTRC) in Tulare, CA. At the VMTRC, senior veterinary students, residents seeking expanded dairy production medicine experience, and high school students contemplating a career in veterinary medicine and related fields, benefit from our hands-on training in a clinical and lab setting to help them be more successful. The VMTRC Dairy Production Medicine Program trains approximately 40 senior veterinary students per year.

Lessons Learned: More and more, people are considering their animals as part of their family. As this trend continues, veterinary medicine becomes a vital part of a family's health care needs. The VMTH is a full service veterinary hospital prepared to tackle the most challenging veterinary cases. We also support the agricultural industry through our food animal programs providing both preventative and clinical care in addition to disease surveillance that could threaten our livestock industries. As the world's population is projected to reach 10 billion by 2050, it is clear that veterinarians will continue to play a vital role in the production of healthy animal-sourced proteins needed to meet the growing food demands. UC Davis veterinarians continue to push the boundaries of what is possible in veterinary medicine setting new standards of treatment and clinical discovery. In 2013, the school opened the Veterinary Center for Clinical Trials (VCCT), allowing for clients to discover and gain easier access to cutting-edge treatments offered at the VMTH. At any given time, the VCCT conducts upwards of 70 clinical trials, ranging from dermatology treatments to the development of the latest advancements in surgical procedures. This same year, the VMTH also installed the world's most advanced linear accelerator, advancing the surgery and radiation therapy programs for cancer care. In 2015, the

VMTH opened the Interventional Radiology (IR) Surgery Suite as a designated space for surgeons to accomplish their groundbreaking work in minimally invasive surgeries. Performing as many as a dozen IR procedures a week, UC Davis has the largest IR caseload of any teaching hospital. Supporting these clinical achievements are second-to-none ancillary services such as anesthesia, imaging and patient care. Patient care is accomplished by the largest technical team of any veterinary hospital in the country. The equivalent to nurses in human medicine, technicians make up the majority of staff, some of whom have achieved the highest level of veterinary technician certification possible.

Clinical support comes from in-house laboratories that provide both clinical diagnostics and pathological services. The VMTH has the capability to quickly diagnose patient conditions as well as provide comprehensive professional necropsy and biopsy diagnostic services, while educating future pathologists and veterinarians. A major component to the VMTH's clinical offerings is a research base that continues to lead the way, nationally and internationally, in groundbreaking studies. Much of this research is done with the support of the school's Center for Companion Animal Health and Center for Equine Health – two major centers that provide expertise and funding to advance clinical care at the VMTH. To educate stakeholders of its accomplishments, a VMTH Communications and Marketing Officer was hired by the VMTH and VMDO in 2012. Charged with increasing public awareness and perception, this officer has created initiatives to increase exposure such as newsletters, patient spotlights, media relations, social media campaigns, and community and national events. The VMTH has been featured in several national media outlets, including the *New York Times*, *Reuters*, etc. The school's social media platforms including Facebook, Instagram, and Tweeter are followed by thousands bringing public attention and donor interest to compelling stories from the School.

Strategic Needs: Despite all this success, medicine and technologies advance, and these cutting-edge clinical programs of today have vast opportunities for growth and improvement in the future; action must be taken to move the VMTH forward in a strategic and visionary direction. Improvements to client and referring veterinarian communications, client experience, and client services are all needed. As the VMTH has seen significant growth, many of its processes and resources need to be improved upon. To that end, the hospital has just completed the first ever comprehensive strategic plan and is in first phases of implementation of the 5 year plan.

The VMTH's core building is 47 years old, and this poses an infrastructure burden due to the rapid expansion of caseload and service offerings. Built to accommodate a caseload of only 3,000 patients a year, the VMTH now services about 50,000 visits; a caseload increase of more than 1,600 percent while only increasing workspace by 60 percent. Faculty, students and staff work in overcrowded clinical and administrative areas of the facility. Recognizing the need for upgraded facilities to improve patient care as well as teaching of students and residents, school leadership has approved an ambitious building plan for the hospital. A multi-year, multi-phased construction project will transform the VMTH into the Veterinary Medical Center (VMC), an advanced, state-of-the-art veterinary medical complex. The first phase of the VMC capital campaign has been launched and include three new buildings: an All Species Imaging Center, a

Livestock Medicine and Service Center, and an Equine Performance Center. Approximately \$67 million have been raised of the \$115 million phase 1 of the campaign.

The VMTH has an internally built electronic medical record system, which was implemented long before electronic medical record systems were used by other academic veterinary teaching hospitals. The School is about half-way through modernizing the hospital's electronic medical records system. The new and improved system is being migrated to an upgraded platform and will undergo many enhancements over the next two years. Finally, grateful clients play a significant role in funds raised through philanthropy. The School has set fund raising records (\$55 million in 2017-18) in three of the past four years and is in the midst of the largest capital campaign in its history.

Options: The VMTH's clinicians strive to provide the best veterinary care. However, services such as surgery, intensive care, oncology, dentistry and oral surgery, imaging and anesthesia have an increasing caseload and as a result of limited resources, some patients/clients are referred or self-select to be treated in other facilities (competitors). One example is the radiology service that currently has seven faculty clinicians and eight residents, and obtains nearly 17,000 imaging sets each year. The hospital needs to increase its work capacity throughput by streamlining patient flow from one service to another, reducing bottlenecks and achieving maximum efficiency. Additional human resources to faculty and staff are planned, along with upgraded equipment and a new All Species Imaging Center as part of the VMC will help improve the capacity of this service and allow for new innovations.

Compared to other veterinary hospitals, the VMTH continues to stand out from its peers. It strives to attract the most talented clinicians in their respective fields. It is regarded by many as the best veterinary hospital in the country. In order to continue that success and maintain competitive advantage, UC Davis veterinarians need to sustain their passion and continue to discover new and innovative ways to treat animals. School, university, state, and national leaders will need to continue to support the VMTH and veterinary medicine in general for the hospital to maintain its premiere status. Opportunities abound for the VMTH to continue its unprecedented growth, improve patient care, continue discovery and to distinguish itself from the competition. Increasing the hospital's public visibility should be a continued focus. This will attract a client base that sees value in VMTH's ability to provide world-class care. To improve the large animal case profile, not necessarily through an increase in patient volume, but instead by focusing on targeted areas of clinical expertise. In turn, this has the potential to increase large animal revenue and access to additional resources as a result. It could also provide increased interest in veterinary students to pursue a large animal career path.

The VMTH's multi-disciplinary approach for many cases is a unique quality to hospitals of its size. The ability to treat an animal's cancer, cardiac, visual, and gastrointestinal disorders all under one roof is rare in most veterinary clinics. In order to move forward and improve its offerings, the VMTH needs to capitalize on opportunities to be its own best referring veterinarian. Clinicians being more aware of activities that are happening outside of their services will help all of their patients' needs and will facilitate better care and communication

on those cases. This will lead to an improved client experience and more cross-specialty collaborations. The veterinary hospital supports community practice and community surgery, both foundational services for the School's goals in training entry-level veterinarians and to meet AVMA/AAVMC Council of Education accreditation, which is being renewed in 2018.

One of the biggest opportunities for advancing VMTH visibility, patient care, and veterinary medicine in general is the unique connection between the VMTH, UC Davis Health, and the University's vast healthcare system. This is a distinctive attribute of the UC Davis system – combining the efforts of the top ranked veterinary school with its highly ranked medical school and clinical departments and centers. The opportunity for translational clinical advances as a result of the veterinary/human medicine collaboration are truly exciting and provide a gateway to new discoveries and innovation. The UC Davis-NCI designated Comprehensive Cancer Center and the Institute for Regenerative Cures are perfect examples of how UC Davis veterinarians and physicians are working together to overcome medicine's most challenging problems. These collaborations have produced groundbreaking clinical applications, as well as outstanding publicity for the VMTH; further collaborations are needed to maximize those efforts.

Projected Costs: The master plan for the VMC project is estimated to cost \$508 million dollars in total to complete the plan in a timely manner by 2031. The ongoing cost to improve current facilities and operations will likely be needed beyond the ~\$17 million the School devotes to the VMTH operations currently. For example, new office space utilizing the vacated older Scrubs cafeteria will require creative financing and assistance from main campus to be viable. The School distributes most discretionary funds to departments and centers. In 2017-18, approximately 75% of carry forward funds reside outside of the VMDO. Partnerships with other units, industry, government, and other universities will continue to play a major role to finance the clinical operations and accomplish its strategic goals. Development will continue to play a major role in the strategy of the School and its clinical operations.

Short and Long Term Plans:

- Implement the VMTH Strategic Plan developed in 2018, seeking integration with the School's strategic goals and tactics.
- Actively support the current phase 1 capital campaign through stewardship of donors, cultivation of development opportunities, communicate fundraising plans internally and externally, faculty, student, and staff training, etc.
- Ensure continued financial strength and ongoing sustainability.
- Design clinic operations and infrastructure to optimally support patients, clients and referring veterinarians.
- Deploy a team-based approach to capitalize on the unique strengths of the VMC.
- Provide a quality clinical learning experience for students, house officers and technicians.
- Evaluate new service delivery models to enhance clinical efficiency while educating students and house officers.
- Design training programs that meet the current and future demands of the profession.

- Evaluate infrastructure needed to advance financially sustainable clinical and translational research.
- Foster a culture that supports and values research.
- Continue to develop clinical trials to improve treatments and make clinical discoveries.
- Disseminate information about scientific advancement and discovery to the scientific and practice communities, to the public and other stakeholders to enhance marketing, outreach and public relations to improve VMC's reputation and identity.
- Continue to develop cutting-edge, interdisciplinary clinical programs and build upon partnerships and collaborations with specialty practices and referring veterinarians.
- Build unique and productive transdisciplinary collaborations within the School of Veterinary Medicine, across UC Davis and with partners in industry and government to serve the needs of agriculture and ensure a safe food supply.
- Continue to build a respectful, supportive and collaborative work environment that advances diversity and inclusiveness as essential components of VMC.
- Improve work-life balance to bolster workforce satisfaction and engagement.
- Provide professional development and career planning for faculty, staff and house officers.