

Annual call for veterinary medicine design projects

- Have you identified a clinical problem that might benefit from technology development?
- Do you have an idea for a device or process to improve patient care?
- Do you have a need for a device to support your clinical research program?

Design Faculty in the *College of Engineering* are soliciting project ideas that originate in an unmet need within the field of veterinary medicine. Since 2005 undergraduate students in the College of Engineering (COE) have been collaborating with clinicians and researchers in the School of Veterinary Medicine (SVM) to complete their Capstone Senior Design projects. Student teams work to conceptualize, implement, and test a functional prototype by the end of the course.

Recent projects with School of Veterinary Medicine faculty have included:

- Canine measurement frame
- Customized exoskeleton fixation device for canine maxillomandibular fractures
- Canine suspensory ligament detachment teaching model
- Canine CCL tear teaching model
- Endoscopic biopsy device for GI tumors
- All terrain portable anesthesia cart
- Tooth temperature measurement for pulp vitality testing
- Veterinary mouthpiece for dentistry and endoscopy

Please see additional examples and highlights of previous projects in the accompanying materials.

Approximately 6 proposals will be selected by a committee comprised of COE design faculty for funding by the SVM. Selected projects will be provided with approximately \$500 toward construction of a physical prototype, or establishing proof-of-concept, depending on project scope and fabrication costs. The best projects are appropriate in scope for a team of undergraduate students to make meaningful progress in a 6-month time frame (typically January to June, though some teams may seek an early start in Fall). The design process also requires significant creative input from the students. Projects that simply seek to implement a preconceived idea or manufacture an already determined design are not suitable. Devices that are primarily research oriented in their application may be considered, but it is noteworthy that projects with clinical, translational, or point-of-care emphasis are more likely to match with student teams.

Please concisely address the following in a 1 page proposal:

- **Clinical problem:** (Brief background sufficient to describe an unmet clinical need in veterinary medicine and the affected population).
- **Desired outcome:** (What is the desired change or improvement? It is best if this is independent of preconceived solutions. e.g. *There is a need for a customizable, non-surgical method for fixation of skull and jaw fractures in canines*).
- **Significance:** (How would the proposed project enhance the health and well-being of veterinary patients? How will it enhance interactions/ collaboration between the SVM and COE)?
- **Contact information:** (Generally the PI. One or more persons willing to provide *clinical mentorship*. Should be available to periodically meet with students to provide feedback and serve as subject matter experts. They will partner with engineering faculty who will provide mentorship on the design process).

Please forward your proposal to the COE representative and course instructor: Dr. Jennifer Choi (jhkchoi@ucdavis.edu), who you may consult with questions about the design process or the suitability of potential projects. COE faculty representatives across departments will review the project for scope, and attempt to match a student team of appropriate background.

Proposals submitted by the following deadline will be given a priority review: **5:00 PM, Friday, August 30, 2019.**

Thank you for supporting engineering education!