Category I Proposal Review: MS, PhD in Comparative Health Sciences

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Graduate Council Review

Overall Impression:
The proposed graduate program could 1) be a welcome and valuable addition to the OSU campus, 2) provide opportunities for training in the use of whole animals that is currently piecemeal across campus and yet very much in demand, 3) support the research efforts in the CVM and provide expanded career opportunities for its residents, and 4) serve as an incubator for expanded collaborative research and drive greater translational research in the division of health sciences and in life sciences at OSU generally. However, to reach these goals, this proposal needs to: 1) focus on the stated goal of providing training at the whole animal level, 2) provide details on how a sustainable supply of quality, diverse matriculants will be achieved, 3) either become truly interdisciplinary by engaging faculty more broadly across OSU with common interest in use of whole animals and translational research or focus on the needs of the CVM and house the program in the CVM, and 3) provide specific, measurable program outcomes and a robust assessment plan. Details with questions and comments are below.

1. Program Description: An interdisciplinary MS, PhD graduate program in Comparative Health Sciences will replace the discontinued Vet Med PhD program in Biomedical Sciences and an MS program in Veterinary Science, focusing on a multidisciplinary approach to address biological and medical problems on the whole animal level using animal models of disease. This program will be administered by the Graduate School. The program is stated to provide an opportunity for all units within the College of Veterinary Medicine to participate in graduate education and encourage integration of several related areas of emphasis currently existing in other units. Initially, there will be one option, Biomedical Sciences, which will accommodate graduate students within the College of Veterinary Medicine. In the future, there will be opportunity to add other options as the interdisciplinary program expands to include related areas in the health sciences. The proposed course of study includes a program core curriculum of 12 credits and an option-specific curriculum for the remainder of the credits.

Questions/Comments on Section 1:

• The program is proposed to provide a unique niche at OSU and in Oregon with a “focus at the whole animal level, particularly the use of animal models of disease” (pg.2, section 1b) and is proposed to “introduce[s] the concept of translational biology/medicine to basic sciences disciplines” (pg. 10, section 4c).¹

The primary purpose of the program is stated as focusing on whole animals as a distinction from the MCB and other molecular-oriented graduate programs at OSU. However, the

¹ There are many basic science disciplines at OSU that will likely take exception to the characterization that they are not sufficiently aware of translational biology and medicine in their research and graduate program endeavors.
required curriculum proposed for both the MS and PhD degrees does not include a required or selective course in, for example, animal handling, whole animal experimental techniques, experimental animal physiology, developmental biology, or animal models of disease. The required/selective coursework includes molecular techniques (MCB 524) and introductory courses with a molecular basis (Immunology, Biochemistry, Genomics). The animal models course (VMB 521) looks great but isn’t included in the required/selectives list.

After studying the proposal for a while and conferring with others, it seems to me that this new program actually has two purposes. The first is to educate DVM residents, who have abundant knowledge of whole animal physiology and animal handling, in research techniques and particularly more molecular techniques. The second purpose seems to be to provide a place to train graduate students without DVM degrees in the use of animal models and whole animal experimental techniques. If, in fact, this is the dual purpose of the proposed new graduate program, then that needs to be made more clear in the proposal. If not, then I am still confused. It would be helpful to delineate two tracks/options in the degree programs—one for DVM residents and one for non-DVM graduate students—and give details on how these two tracks would overlap and how they would differ. The CVM seems the perfect place to offer such a program and thus increases enthusiasm for this proposal. The interactions between the DVM resident graduate students and the non-DVM students would seem to provide a richer experience for everyone in the program and could be highlighted as a strength and adds to the uniqueness of the program in Oregon and the region.

- There are many units on campus not included in this proposal that could contribute expertise on translational research and the use of animals models, including for example, fish models for epidemiology studies, sheep for studies of reproduction, voles for the study of social relationships, etc. Have the proposal authors considered inclusion of these other faculty on campus to create a truly interdisciplinary program focused on translational research incorporating the use of whole animals?
- Why will the program be housed in the Graduate School? Only one unit is currently involved in the program even if other units are supportive. Does this align with the Graduate School guidelines for housing interdisciplinary programs?
- The description of required, selected and optional courses is a bit confusing. For clarity, it would be helpful to see a sample graduate program of study for an MS student who is also concurrently a DVM resident (the majority of the students currently in the program fall into this category). The credits don’t add up for the MS degree if you look at core program requirements plus option-specific requirements. The top of page 3 says 45 credits total for MS, but core requirements are 12 credits and option specific credits are 45 for a total of 57 credits. The credits add up okay for the PhD at 108 total (12 core + 96 option specific). However, both degree descriptions appear to count the 507 seminar as both required and option specific so this is part of the accounting confusion.
- Three terms of Research Perspectives (research rotation) will be required by both the MS and PhD degree programs. Will research rotations be required of all MS students (including DVM residents) or is this meant only to apply to PhD students? If this will apply to MS students, will this increase the time to graduation, particularly those concurrently working as residents (see concerns of Dr. Lakritz in Letters of Support)?
- Enrollment calculations are based on rolling all current Veterinary Science MS students into the new program. Is it realistic to expect that all current Vet Science MS students will choose to transfer to the new program and fulfill the new requirements, particularly those who have
already completed at least a year in Vet Science? Has a survey been taken of current Vet Sci MS students to gauge interest in transferring? Enrollment calculations should not necessarily include the current students in the Vet Sci MS degree. This doesn’t preclude counting all new CVM residents in the enrollment numbers but suggests a bit of a longer delay to fully meeting university minimums.

• We would like to see copies of the category II proposals for the new courses: Research Perspectives, Biomedical Ethics, Grant Application Preparation, Introduction to Bioinformatics, etc. Have syllabi been prepared and are there instructors with enough FTE to teach the new courses in the program given that no new instructional FTE is included in the proposal? Who are the faculty experts in the College of Vet Med that will teach an Introduction to Bioinformatics or Biomedical Ethics at the graduate level? There is a general list of possible mentors/instructors but nothing specific.

• What is the number of faculty in CVM who are approved to advise PhD students?

• Does the proposal anticipate that CVM faculty will discontinue taking MCB students into their labs and preferentially take PhD students through the proposed new program? This isn’t clear in the proposal.

• How will PhD students be recruited into the program? Under section e, “Ways in which the program will seek to assure quality, access and diversity” the recruitment plan is vague and lacks any detail on how a diverse, high quality applicant pool will be filled. Please provide details on diversity recruitment.

• How many domestic underrepresented minorities, women, and international students are currently in the Vet Med MS program? Is the Comparative Health Sciences MS degree expected to draw from the same pool of prospective students as the Vet Med MS?

• The proposal projects a 10 to 20% expansion in student numbers over the next five years. At full capacity, how many students will the program enroll? Does the quality of the current applicant pool—beyond the DVM residents—support such an aggressive expansion? If not, please give details on how the applicant pool will be expanded while maintaining quality. Also, scholarships are mentioned in the proposal. Please describe what types of competitive scholarships will be available to recruit bright students (section 1h) and if the scholarships will supplement or substitute for GTA/GRA positions.

• How will co-mentoring of students be encouraged? Does OSU have a policy on how to handle co-mentored students? Will a policy be developed to clarify financial and academic responsibility for a student in a co-mentored situation?

• How will the program graduate three Ph.D. students per year starting in the third year of the program assuming that PhD students take an average of five years to complete a program (section 1h)? Five years or longer would seem to be a more realistic timeline for ramping up to three PhD graduates per year.


3. Accreditation- No problems

4. Need (Evidence of market demand)- Evidence of need expressed.
5. Outcome and Quality Assessment- Section 5a refers to an “Appendix 1 for assessment forms” but the online version of the proposal and supporting documents did not include an appendix 1 that we could find. Please include. If we are in error, please advise. Although general learning outcomes are listed consistent with the approved OSU graduate learning outcomes, OSU also requires each program to develop its own specific learning outcomes and a detailed assessment plan. These are missing from the proposal. We would like to see specific learning outcomes, several of which would be expected to be unique to a program in Comparative Health Sciences, as a means of focusing the program more on the niche of whole animal studies. An assessment plan should then be provided that is linked to the specific learning outcomes. The graduate committee of the CVM is encouraged to consult with the Graduate School and the Assessment Office to develop a robust and useful assessment plan.

6. Program Integration and Collaboration- The program is stated as interdisciplinary but only a small number of faculty from two other colleges (Pharmacy and CPHHS) are included relative to the majority of the faculty from CVM. The potential for collaborations across campus seems much bigger for this program as many faculty in more molecular disciplines such as Biochemistry and Microbiology already welcome and would potentially increase interactions with partners with expertise in whole animals.

7. Financial Stability-Clinical residents are currently funded but how will other MS students not linked to a residency be funded? It is stated that FTE of current faculty will be reprioritized to cover new courses but that no new FTE will be added. How will FTE be re-prioritized to meet the new course load and the increased number of students requiring thesis advisors. In other words, what will faculty discontinue to meet the new responsibilities of this program? Will mentoring of MCB students will be reduced to accommodate mentoring of PhD students in Comp Health Sci?

8. External Reviews/Liaison letters- Reviews and letters are generally positive but with concerns about clinical residents and number of required didactic courses (see letter from Dr. Lakritz). Please provide a response to the concerns cited by Dr. Lakritz. Has the graduate studies committee acted upon the recommendation of setting a minimum number of graduate committee meetings for each student and keeping minutes suggested by Dr. Van Metre?