

D. Highlighted Achievements/Activities

DOMAIN 1a Teaching (classroom or clinical)		Do not exceed 2 pages.
Name: Christianne Magee	Affiliation: BMS, Colorado State University	
1. Name your teaching activity(ies): Identify the impactful activity you've select to focus on.		
Gross Domestic Animal Anatomy		
2. Your role(s): Describe your role(s) and specifically what you contribute.		
<p>I am the Director of Animal Anatomy Programming and Strategic Planning for the Department of Biomedical Sciences. In this role I am course director for the undergraduate gross Domestic Animal Anatomy course (BMS305) with an accompanying Honors breakout session (BMS496D), graduate Domestic Animal Anatomy Dissection course (BMS531), graduate Case-Studies in Animal Anatomy (BMS633), an Independent Study in Large Animal Anatomy for DVM and graduate students (VM795/BMS695f), as well as supervise 1 anatomy instructor, 1 non-tenure track assistant professor, 1 laboratory coordinator, and 3 anatomy student technicians who function as custodians and assist with specimen preparation/disposal. I also coordinate space use and planning, including outreach activities and operating budgets for staff and facilities. Although we rely heavily on the Virtual Animal Anatomy program for anatomical instruction at CSU, these responsibilities are separate from my role as Project Lead for Virtual Veterinary Education Tools. The anatomy courses described above are taught in the Spring semester with Veterinary Functional Anatomy (VM616) and Veterinary Physiology (VM618) taught in Fall. I am a floor anatomist when needed in VM616 and course director/lecturer in VM618, which also requires that I coordinate our physiology instruction and assessment at CSU with our 2+2 program at University of Alaska Fairbanks. In this role I also contribute to curriculum development, program review, and strategic planning in BMS as well as the DVM Curriculum Renewal group. I am also the faculty coordinator of the DVM Tutoring program. This program uses peer teaching to help first year students develop active learning strategies and adjust to the academic rigor of professional school.</p>		
3. Learners and amount of contact: Describe types, levels and numbers of learners; amount of contact you have with them.		
<p>Each Spring semester I have >200 undergraduate, graduate, and DVM students for lecture, prosection and dissection laboratory, case studies, Honors breakout, peer teaching assistants and independent study for approximately 17 hours of structured contact time each week. My Fall teaching contact is significantly less than Spring and primarily with first year DVM students (~138) in their anatomy and physiology courses.</p>		
4. Goals and learning objectives: List goals and <u>learning objectives</u> of this activity. If these are extensive, provide just a few illustrative examples.		
<p>All lectures and laboratories begin with specific learning objectives for the session which then correlate directly to formative and summative assessments. My goal when teaching is that students will be able to apply the knowledge that they have gained well beyond the next assessment or end of the course. Integrating gross and microscopic anatomy with physiology for the veterinary students is critical for providing them with foundational knowledge that they will need to apply throughout their career. In contrast, the majority of my BMS305 students are early in their academic career and wish to attend veterinary school. As an instructor, my goal for all of my students is to aid them in finding their own success by developing active learning strategies that can be applied in other courses and as lifelong learners. I also encourage students explore their own personal or professional goals through their learning.</p>		
5. Methods: Describe the methods used for instruction, how these align with objectives, and rationale for choices.		
<p>In anatomy, learners are scaffolded with a combination of prosection and dissection, paired with case studies and guest lecturers to facilitate integration of topics outside of anatomy. In both anatomy and physiology, topics are applied to clinical cases and with students using a 4-step model to solve novel problems (Hall et al., JAE 2016). In collaboration with The Institute for Learning and Teaching (TILT) at CSU, student success in the anatomy program has been studied to determine the most effective mechanisms for facilitating student success. Not only are these shared with students, but strategies to facilitate early feedback and opportunities for intervention have been implemented in both my anatomy and physiology courses including high frequency/low stakes assessments and exam wrappers.</p>		
6. Rationale: Describe why and how you chose the method(s) you used.		

<p>Anatomy by itself is an exercise in memorization. Anatomy paired with embryology, physiology, and biomechanics is the study of form and function and therefore life. Learning activities that give anatomical structures purpose are those that give them life beyond a learning session. The same is true of topics in physiology and is why we use concept mapping and clinical cases to help students integrate and apply knowledge gained. Most students are excited to learn anatomy and physiology and simply need some guidance in adjusting their approach to learning.</p>
<p>7. Results and impact: Describe evidence of learner satisfaction (<i>e.g. student ratings of teaching/course</i>), learning outcomes, application of knowledge in other settings at your institution, impact on educational programs within the institution, and/or teaching awards.</p>
<p>Specific student ratings for each course by year are provided later in this document. In the cohort of DVM courses from 2012-2019, students report (1-5 likert scale, 1=strongly agree, 5=strongly disagree; mean±SEM) that I create an environment that was conducive to learning (1.6±0.1) and taught in a way that helped them learn the most important information (1.8±0.1). In the cohort of anatomy courses using an opposite scale (1-5 likert, 5=strongly agree, 1=strongly disagree; mean±SEM), student ratings of me as an instructor (4.8±0.1), the classroom environment (4.9±0.1), and facilitation of learning (4.8±.1) indicate high learner satisfaction. As a representative measure of program leadership and instructional delivery of anatomy courses following the online transition during the Spring 2020 semester, students at the end of semester agreed (1-7 likert scale, 1=strongly disagree, 7=strongly agree) with the statement "The COVID-19 transition in this course was a success" (Course: respondents/total enrollment, mean±SEM; BMS305: 117/131, 5.5±1.5; BMS531: 25/31, 6.4±0.7). Qualitative student feedback from individuals who have gone on to veterinary school or from students and faculty in later years of the DVM program suggest that our anatomy and physiology courses provide students with strong foundational knowledge that they are able to apply outside of the classroom.</p>
<p>8. Reflective critique: Describe your reflections, what went well and plans for improvement. If applicable, briefly explain how the information obtained through this teaching activity and its evaluation changed your overall educational practices?</p>
<p>The COVID-19 transition this year was exceptionally challenging. I had more than 200 students in 12 different course registration numbers, so while they were all "anatomy" - each one required specialized attention and modification to deliver laboratory based anatomical instruction in an online environment. In the week before Spring Break, I began planning for the transition with my team of instructors and GTAs and we worked non-stop for the next 8 weeks to create new content and strategies for delivering a large laboratory course online. I strive to be equitable, inclusive, and transparent as a course director. Changing course design and assessment structure/point values mid-semester only occurs as the result of a pandemic. I am relieved that the students were happy with the transition and will certainly use some of this content, including Zoom Open Lab and Guided Quizzes, in future anatomy courses and to inform design of my Fall 2020 online VM618 course as well as our DVM Curriculum renewal</p>
<p>9. Dissemination: If applicable, describe how your efforts have been recognized by others externally through peer review, dissemination, use by others, or teaching awards nationally.</p>
<p>The scaffolding of instruction coupled with virtual anatomy software resources in my undergraduate and graduate anatomy program is being used a model for DVM curricular design at CSU and by other veterinary schools. Strategies for developing an anatomy learning ecology with strategies for early student intervention (Magee et al. TILT PDI 2014; Magee et al. AAVA 2019) and teaching anatomy online with the Virtual Animal Anatomy course are the subject of invited talks and a manuscript in preparation.</p>