

Curriculum Vitae

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EDUCATION

2000 BS (Biotechnology), Worcester Polytechnic Institute, Worcester, MA, USA
2004 DVM, Cummings School of Veterinary Medicine at Tufts University, North Grafton, MA, USA
2007 MS (Clinical Sciences), Colorado State University, Fort Collins, CO, USA
2007 Diplomate, American College of Theriogenologists
2010 PhD, Physiology, Colorado State University, Fort Collins, CO, USA

CV SECTION 1: *Employment History and Awards*

ACADEMIC POSITIONS

2018 - present Assistant Professor, Regular Appointment (TT), Department of Biomedical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO.
2012 - 2018 Assistant Professor, Special Appointment (NTT), Department of Biomedical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO.

CURRENT JOB DESCRIPTION

	%Teaching/ Mentoring	% Research / Creative Activity	% Service / Outreach	% Administrative
2018-present	65	20	15	0
2017	65	15	20	0
2012-2016*	40	60	0	0

*Research effort >50% is required for an NIH Loan Repayment Program (LRP) award (2011-15). Teaching load 2016-2017 as evaluated by CVMBS faculty was calculated at >100%. In 2018, 3 years of credit were awarded for previous efforts and an additional part-time animal anatomy instructor was hired to provide teaching support.

HONORS AND AWARDS

2011-2015 National Institutes of Health (NIH) Contraception and Infertility Loan Repayment Program (LRP), Clinical Award (\$96,000) funded by National Institute of Child Health and Human Development (NICHD)

2013 *Teaching Fellow*, The Institute for Teaching and Learning (TILT) at Colorado State University. TILT/Reinvention Center Science of Learning Course Development Competition is an ambitious effort to enhance learning, increase engagement, and promote pedagogical innovation undergraduate course redesign. Department heads must support faculty applications and selection is made by TILT. This opportunity was used to re-design BMS305 and create a programmatic vision for animal anatomy instruction in BMS.

2008-2010 *Trainee*, NIH Training Grant in Mammalian Reproductive Biology (T32-HD007031). Animal Reproduction and Biotechnology Laboratory, Department of Biomedical Sciences, Colorado State University, Fort Collins, CO

2009 *Young Investigator Award*, American Quarter Horse Foundation. Competitive award to support the applicant and their research

2009 *Thornburg Research Award, 1st Place Student Talk*. Colorado State University Department of Biomedical Sciences Annual Research Retreat. Fort Collins, CO

2009 *Carlton Sundberg Memorial Scholarship*. Colorado State University, College of Veterinary Medicine and Biomedical Sciences. Fort Collins, CO

2008 *Storm Cat Career Advancement Award*, Grayson Jockey Club Foundation. One time (\$20,000) award intended to support development of promising equine investigators

2008 *Larry Ewing Memorial Trainee Travel Award*. Society for the Study of Reproduction 41st Annual Meeting. Kona, HI

2008 *3rd Place*, Society for Theriogenology Annual Conference. Student Platform Presentation. St. Louis, MO

2007 *3rd Place*, Colorado State University, College of Veterinary Medicine and Biomedical Sciences Research Presentation Day. Clinical Sciences, Poster Presentation. Fort Collins, CO

2007 *1st Place*, Front Range Neuroscience Group 5th Annual Meeting, Poster Presentation, Fort Collins, CO

2006-2007 *Dr. Dean Pavillard Scholarship*. Colorado State University, College of Veterinary Medicine and Biomedical Sciences. Fort Collins, CO

CV SECTION 2: Publications/Scholarly Record

PUBLISHED WORKS

Refereed Journal Articles:

1. Murtazina DA, Arreguin-Arevalo JA, Cantlon JD, Boroojeny AE, Shrestha A, Hicks JA, **Magee C**, Kirkley KS, Jones KL, Nett TM, Chitsaz H, Clay CM. 2020. Enrichment of ovine gonadotropes via adenovirus gene targeting enhances assessment of transcriptional changes in response to estradiol. *Biology of Reproduction*, 102:156-169. PMID: 31504222. 2 citations as of 5-11-2020.
2. Urias-Castro CA, Arreguin-Arevalo JA, **Magee C**, Weber E, Nett TM. 2019. Hypothalamic Concentrations of Kisspeptin (KP) and Gonadotropin-Releasing Hormone (GnRH) during the Breeding Season and Non-Breeding season in Ewes. *American Journal of Reproductive Immunology*. 82:e13146. PMID: 31206871. 0 citations as of 5-11-2020.
3. Hall H, **Magee C**, Clapp T. 2016. 4-Step Model to Approach Case-Base Learning in the Classroom. *Journal of Adult Education* 45:24-27. 2 citations as of 5-11-2020.
4. Dang AK, Murtazina DA, **Magee C**, Navratil AM, Clay CM, Amberg GC. 2014. GnRH evokes localized subplasmalemmal calcium signaling in gonadotropes. *Mol Endocrinol*. 28:2049-59. PMID: 25333516. 16 citations as of 5-11-2020.
5. **Magee C**, Bruemmer JE, Nett TM, Squires EL, Clay CM. 2012. Kisspeptide in the estrous mare: Is it an appropriate ovulation-inducing agent? *Theriogenology*. 78:1987-96. PMID: 23040060. 7 citations as of 5-11-2020.
6. Seachrist DD, Johnson E, **Magee C**, Clay CM, Graham JK, Veeramachaneni DN, Keri RA. 2012. Overexpression of follistatin in the mouse epididymis disrupts fluid resorption and sperm transit in testicular excurrent ducts. *Biol Reprod* 87:41. PMID: 22649074. 10 citations as of 5-11-2020.
7. **Magee C**, Foradori CD, Bruemmer JE, Arreguin-Arevalo JA, McCue PM, Handa RJ, Squires EL, Clay CM. 2009. Biological and anatomical evidence for kisspeptin regulation of the hypothalamic-pituitary-gonadal axis of estrous horse mares. *Endocrinology*. 150:2813-21. PMID 19228887. 58 citations as of 5-11-2020.
8. McCue PM, **Magee C**, Gee EK. 2007. Comparison of Compounded Deslorelin and hCG for Induction of Ovulation in Mares. *J Equine Vet Science*. 27, 58-61. 33 citations as of 5-11-2020.
9. McCue PM, Logan NL, **Magee C**. 2007. Management of the transition period: hormone therapy. Tutorial article. *Equine Vet Educ*. 19, 215-221. 24 citations as of 5-11-2020.
10. McCue PM, Logan NL, **Magee C**. 2007. Management of the transition period: physiology and artificial photoperiod. Tutorial article. *Equine Vet Educ*. 19, 146-150. 16 citations as of 5-11-2020.

Textbooks:

1. Falls AD and **Magee C**. 2018. *Anatomy and Physiology of Farm Animals*. 8th Edition. Wiley. (Reviewed in JAVMA 2019)

Refereed Proceedings/Transactions:

1. Salman S, Asghar A, **Magee C**, Winger Q, Bouma G, Bruemmer J. 2019. Establishment and characterization of Day 30 equine chorionic girdle and allantochorion cell lines. *Reproduction, Fertility and Development* 32, 171-171. Proceedings of the 2020 Annual Conference of the International Embryo Technology Society, New York, NY.
2. **Magee C**, Kirkley K, Sylvester L, Runyan B, Clay C. 2019 Immunohistochemical evidence for kisspeptin signaling in equine gonadotropes. Society for Theriogenology Annual Conference. Poster Presentation. Savannah, GA.
3. AC Garrett, Ivie KR, Linton A, Martin JF, Delcambre JJ, Whalen LW, **Magee C**. Use of Virtual Canine Anatomy Improves Student Outcomes in an Undergraduate Domestic Gross Anatomy Course. 2019. American Association Veterinary Anatomists Annual Meeting. Poster Presentation. University of Calgary, Canada.
4. AC Garrett, Ivie KR, Linton A, Martin JF, Delcambre JJ, Whalen LW, **Magee C**. Use of Virtual Canine Anatomy Improves Student Outcomes in a Domestic Gross Anatomy Course. 2019. Regional Teaching Academy Biennial Meeting. Scholarship Platform Session. UC Davis, California.
5. Dang AK, Murtazina D, **Magee C**, Navratil AM, Clay CM, Amberg G. 2014 Actin Cytoskeleton Modulates Local L-Type Calcium Channel Signaling and ERK Activation in Gonadotropes. Endocrine Society Annual Meeting. Poster Presentation. Chicago, Illinois.
6. Cantlon JD, Fernholz LM, Murtazina D, **Magee C**, Arreguin-Arevalo JA, Goetzmann LN, Clay CM. 2014 The Peroxisome Proliferator-Activated Receptor Alpha Agonist Fenofibrate Attenuates the Estradiol Mediated Increase in GnRH Receptor Expression. Endocrine Society Annual Meeting. Poster Presentation. Chicago, Illinois.
7. **Magee C**, Bruemmer JE, Nett TM, Squires EL, Clay CM. 2014. Kisspeptin has a direct effect on equine gonadotropes, International Symposium for Equine Reproduction XI. Oral Presentation. Hamilton, New Zealand.
8. **Magee C**, Kouri JE, Cantlon JD, Clay CM. 2013. Development of a New Transgenic Line of Mice for Evaluating Ovine GnRH Receptor Expression *in vivo*. Society for the Study of Reproduction 46th Annual Meeting. Poster Presentation. Montreal, Québec.

9. Chaplin NL, **Magee C**, Murtazina D, Clay CM, Amberg GC. 2012. Local L-Type Ca²⁺ Channel Signaling in aT3-1 Cells. *Endocrine Reviews*, Vol. 33. Endocrine Society's 94th Annual Meeting. Poster Presentation. Houston, TX.
10. **Magee C**, Bruemmer JE, Arreguin-Arevalo JA, Nett TM, Squires EL, Clay CM. 2010. Evidence of a New Hierarchy in Kisspeptin Signaling in the Mare. Society for Theriogenology Annual Conference. Platform Presentation. Seattle, WA.
11. **Magee C**, Bruemmer JE, Arreguin-Arevalo JA, Nett TM, Clay CM. 2010. An Evaluation of Repeated Injection of Equine Kisspeptide in Diestrous and Estrous Mares. Proceedings of the 10th International Symposium on Equine Reproduction in Animal Reproduction Sciences Supplement 121:45-46. Oral Presentation. Lexington, KY.
12. **Magee C**, Arreguin-Arevalo JA, Bruemmer JE, Mrdutt MM, Cantlon JD, McCue PM, Clay CM. 2008. Peripheral Kisspeptide Administration Elicits an Increase in Serum FSH in the Diestrous Mare. Society for the Study of Reproduction 41st Annual Meeting. Oral Abstract Presentation. Kona, HI. 1 citation as of 9-18-17.
13. **Magee C**, Arreguin-Arevalo JA, Cantlon JD, Mrdutt MM, Nett TM, Clay CM. 2008. Luteinizing hormone-induced release by kisspeptide in primary cultures of equine pituitary cells. Society for Theriogenology Annual Conference. Platform Presentation. St. Louis, MO.
14. **Magee C**, Bruemmer JE, Foradori CD, McCue PM, Clay CM. 2007. Evaluation of Kisspeptin in the Hypothalamic Pituitary Gonadal Axis of the Mare. *Theriogenology*. 68:503-504. 1 citation as of 9-18-17.
15. **Magee C**, Foradori CD, Bruemmer JE, McCue PM, Handa RJ, Clay CM. 2007. Distribution of Kisspeptin and GnRH Immunoreactive Neuronal Contacts in the Preoptic Area and Hypothalamus of the Mare. Society for the Study of Reproduction 40th Annual Meeting. Oral Abstract Presentation. San Antonio, TX.

Non-Refereed Articles/Chapters/Proceedings/Transactions:

1. **Magee, C.** Cantlon JD, Bruemmer JE, Nett TM, Clay CM. 2011. Cautionary Tales: The rigors and realities of Next-Generation Sequencing. Rocky Mountain Reproductive Sciences Symposium. Poster presentation. Fort Collins, CO.
2. **Magee C.** 2011. Next-Generation Sequencing. Colorado State University Department of Biomedical Sciences Annual Research Retreat. Techniques Blitz. Estes, CO.
3. **Magee C**, Foradori CD, Bruemmer JE, McCue PM, Clay CM. 2007. Evaluation of Kisspeptin in the Hypothalamic Pituitary Gonadal Axis in the Mare. Colorado State University College of Veterinary Medicine and Biomedical Sciences 8th Annual Research Presentation Day. Poster Presentation. Fort Collins, CO.
4. **Magee C**, Foradori CD, Bruemmer JE, McCue PM, Handa RJ, Clay CM. 2007. Evaluation of Kisspeptin in the Mare. Front Range Neuroscience Group 5th Annual Meeting. Poster Presentation. Fort Collins, CO.
5. **Magee C**, Corning C, Farmerie TA, McCue PM, Clay CM. 2006. Evaluating the Role for Kisspeptin in the Mare. Front Range Neuroscience Group 4th Annual Meeting. Poster Presentation. Fort Collins, CO.

Manuscripts Accepted for Publication (*in press*):

1. **Magee C**, McDaniel S, Turk P, Striegel N, Roman-Muniz IN. Information-seeking preferences of the Colorado equine industry for distribution of disease outbreak information. *Journal Equine Veterinary Science*. JEVS-D-20-00107. Accepted for publication May 8, 2020.

Refereed Journal Articles - *under review*:

1. Linton A, Garrett AC, Ivie KR, Jones JD, Martin JF, Delcambre JD, **Magee C**. Enhancing anatomical instruction: Impact of a virtual canine anatomy program on learning outcomes. *Anatomical Sciences Education*. ASE-20-0024. Submitted January 2020. *Journal noted significant delays in review times due to COVID-19. Assigned to reviewers May 2020.*
2. **Magee C**, Bruemmer JE, Kirkley KS, Sylvester LA, Runyan B, Nett TM, Squires EL, Clay CM. Kisspeptin has an independent and direct effect on the pituitary gland in the mare. *Theriogenology*. THERIO-D-20-00407. Revisions after review submitted June 2020.
3. Lee S, Wendland T, **Magee C**. Orthotic device use in canine patients: Owner-reported outcomes and impact on quality of life for owners and patients. *PLOS ONE*. PONE-D-20-16041. Submitted May 27, 2020.

CONTRACTS & GRANTS *αdisciplinary, δinterdisciplinary, ϕservice, εengagement*

External Applications Pending as Co-PI

*α*July 2020 "Validation of equine endometrial organoids as a three-dimensional *in vitro* culture model for the study of equine endometritis" \$10,800. PI: Hollinshead KF. Objectives: 1) assessment of the apoptotic index and architecture of endometrial cells following *in vitro* culture of organoids and monolayers; 2) assessment of *in vitro* inflammatory response of endometrial cells to a known stimulus.

Externally-Funded Projects as PI

*δ*Awarded June 2020 "Virtual Bovine Anatomy: Pelvic Limb" \$150,000 *USDA-NIFA Higher Education Challenge*. Primary Objectives: 1) development of a 3D VBA Pelvic Limb module for DVM education; 2) the creation of an undergraduate (UG) Applied Food Animal Anatomy curricula; 3) engagement of UG and DVM students in learning, teaching, and outreach activities

2017-2020 "Evaluation of Kisspeptin in the Pregnant Mare" \$113,000. *Grayson Jockey Club Foundation*, Lexington, KY. Aims: 1) Quantification of kisspeptin during equine pregnancy; 2) characterization of Kiss1/Kiss1r expression at the fetal-maternal interface

2009-2010 "Kisspeptin Mediated Regulation of the Equine Hypothalamic Pituitary Gonadal Axis" \$50,499. Young Investigator Award, *American Quarter Horse Foundation*, Amarillo, TX. Aims: 1) characterization of Kiss1 expression in the equine hypothalamus; 2) determining the biological response to exogenous kisspeptide

Externally-Funded Projects as Co-PI

April 2020 "Kisspeptins as Pro-apoptotic Mediators during Equine Endometrial Cup Demise" \$5,000. PI: Gomes VCL, Co-PI: Sones JL. *Theriogenology Foundation*. Primary Aim is to compare the spatiotemporal Kiss1/Kiss1r gene and protein expression during pregnancy. I have provided assays and training to Gomes (PI) at CSU and LSU.

Internally-Funded Projects (since 2012)

2020-ongoing "Metabolic and Reproductive Consequences of Elevated Free Fatty Acids in Domestic Ruminants" \$25,000 *CVMBS College Research Council*, Colorado State University. Aim 1: By using normal weight, normally cycling ewes during diestrus, we test the specific hypothesis that increased circulating FFAs and hyperinsulinemia result in reduced pituitary sensitivity to GnRH in the normal ewe. Aim 2: Decreased pituitary sensitivity to GnRH is understood to be responsible in humans for the gonadotropin phenotype observed in reprometabolic syndrome. In this aim we propose to validate an in vitro model for reprometabolic syndrome using primary sheep pituitary cells by testing the specific hypothesis that E2 induced increase in specific gonadotrope gene expression will be eliminated (or reduced) by the presence of increased fatty acids in the culture media.

2019-ongoing "Development of a Curricular Mapping Tool" Role: PI, \$14,800. *Colorado State University Provost's Digital Learning Initiative*. Collaborative proposal with faculty from LIFE102, CVMBS BMS, MIP, ERHS, CSU DVM, and UC Denver medical program. The specific project deliverables include: 1) a curriculum map of BMS and LIFE102 student learning objectives; 2) a searchable database of BMS/LIFE102 student learning objectives; 3) course staffing information related to percent efforts and types of teaching for each course.

2013-2014 "Development of a Virtual Bovine Anatomy (VBA) Tool" Role: PI, \$23,500 *CVMBS College Research Council*, Colorado State University, Fort Collins, CO. The specific project deliverable was the bovine osteology module for VBA which I completed and serves as preliminary data for USDA NIFA HEC grant applications.

2011-2012 "Measurement of Kisspeptin in the Horse" Role: PI, \$16,500 *CVMBS College Research Council*, Colorado State University, Fort Collins, CO. The specific project deliverable was an equine radioimmunoassay for kisspeptin that I developed and was necessary to secure a Grayson Jockey Club Research Foundation grant (2017-2020). The RIA methods and materials contributed to the Urias-Castro et al., 2019 manuscript.

Applications Submitted but not Funded as PI

2019 USDA-NIFA Higher Education Challenge "Virtual Bovine Anatomy: Pelvic Limb" \$150,000 Objectives: 1) development of a 3D VBA Pelvic Limb module for DVM education; 2) the creation of an UG Applied Food Animal Anatomy curricula; 3) engagement of UG and DVM students in learning, teaching, and outreach activities

2019 Science Education Partnership Award (SEPA, R25 PAR-17-339, Limited Submission by CSU). "Fostering Diversity and Capacity in Biomedical Sciences and Veterinary Medicine through Outreach and Engagement." \$1.25M/5y Role: PI; Co-I: Gilbert John, PhD. Aims: to integrate the broad outreach activities in the CVMBS by scientifically evaluating current programmatic efforts, expanding impact, advancing collaboration, strengthening infrastructure, and broadening participation. Program plan used to secure funding for Zoetis Pre-Veterinary Discovery Camp

2018 "Virtual Bovine Anatomy: A One Health Tool" Lyle Spencer Research Award. \$250,000. Letter of Intent.

"Virtual Canine Anatomy - Spanish Translation" Colorado State University One Health Institute. \$50,000

USDA-NIFA Higher Education Challenge "Virtual Bovine Anatomy: Pelvic Limb." \$150,000 Objectives: 1) development of a 3D VBA Pelvic Limb module for DVM education; 2) the creation of an UG Applied Food Animal Anatomy curricula; 3) engagement of UG and DVM students in learning, teaching, and outreach activities

2016 AQHA "A Kisspeptin Blood Test to Determine Equine Embryo Transfer Success." \$47,735 Primary Objectives: 1) To determine if eKP-10 levels during the first trimester of equine pregnancy can be used as predictor of equine pregnancy viability and neonatal health

- 2015 NSF Application #1612059 "Elevating the Scholarship of Teaching in Biomedical Sciences." Co-PI: Kaminski K, \$299,737 Objectives: 1) To develop a course in evidence-based educational methods in the biomedical sciences curricula for graduate students; 2) Test the specific hypotheses that a) graduate students who have completed such a course will be better prepared to teach, and b) providing graduate students with the opportunity to enhance pedagogical skills in teaching biomedical sciences and peer feedback, will directly enhance undergraduate education in the sciences.
- 2015 USDA-NIFA Higher Education Challenge "Virtual Bovine Anatomy: Dissection of the Pelvic Limb." Co-PI: Roman-Muniz IN, \$150,000 Objectives: 1) Produce the Pelvic Limb unit of the Virtual Bovine Anatomy program; 2) Test the hypotheses that a) use of the Virtual Bovine pelvic limb anatomy will improve student test scores on for the Pelvic Limb unit, b) Virtual Bovine Anatomy will increase student efficiency and motivation while studying anatomy.
- 2014 NSF Application #1504759 "Virtual Anatomy In Undergraduate STEM Engagement." Co-PI: Whalen LR, \$250,000 Objectives: 1) To create spatial and cognitive skills development programs within the Virtual Canine Anatomy platform. 2) To determine if enhancement of the Virtual Canine Anatomy program improves student learning, enhances engagement, and improve undergraduate STEM engagement.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES*/PROFESSIONAL MEETINGS/WORKSHOPS (since 2014)

- *January 2020. "Development of 3D VR assets and Evaluation of VR in DVM teaching." Invited talk and VR demonstration at the UC Davis School of Veterinary Medicine. Davis, CA.
- *July 2019. "Virtual Animal Anatomy in DVM Education." E-Health Summer University. Invited talk and VR demonstration. Castres, France
- *April 2019. "Anatomical Education using Case Based Inquiry and Virtual Reality." Veterinary Medical Association Executives (VMAE) ThinkWorks Conference. Invited talk & VAA VR demonstrations. San Francisco, CA
- April 2019. "Virtual Animal Anatomy – VR Education." Veterinary Innovation Summit. Selected start-up for VR demonstrations. College Station, TX
2018. "Virtual Animal Anatomy: From Research to Market." Presenter at Department of Biomedical Sciences Annual Retreat. Colorado State University, Estes Park, CO
- *2018. "Virtual Animal Anatomy - Japanese Translation." Invited talk at University of Hokkaido Veterinary School. Sapporo, Japan
- *2017. "Scaffolding Learning in Anatomy: The Pelvic Limb." Invited Talk at Tufts University Cummings School of Veterinary Medicine, Grafton, MA
- *2017. "Virtual Animal Anatomy: User Experiences and Future Directions." Invited Talks at Daktari Animal Hospital, Tokyo and University of Hokkaido Veterinary School. Sapporo, Japan
2017. "Virtual Animal Anatomy: User Experiences and Future Directions." Special Seminar, Department of Biomedical Sciences, Fort Collins, CO
2015. "Assessing Course Quality." Presenter with D. Johnson and S. Burns at TILT Professional Development Institute. Colorado State University, Fort Collins, CO
2014. "Development of Student Learning Objectives for Graduate Students within the Context of Program Review." Workshop Organizer and Facilitator with D. Johnson and L. Jensen at Department of Biomedical Sciences Annual Retreat. Colorado State University, Estes Park, CO

COLLABORATIVE, INTERCOLLEGIATE & INTERDISCIPLINARY SCHOLARSHIP

For an evaluation of these activities by Dr. David Paterson (Assistant VP for Research at CSU), please visit my website at <https://christiannemagee.com/virtual-animal-anatomy>

Virtual Veterinary Education Tools (VVET) - Program Lead as of 2018

- **Virtual Animal Anatomy (VAA)** is a suite of virtual anatomy (canine, feline, equine, bovine) software programs produced by the Virtual Veterinary Education Tools (VVET) group within the College of Veterinary Medicine and Biomedical Sciences. Designed as a virtual atlas for use in all areas of domestic animal anatomic instruction to enhance student learning and availability of instructional materials given the challenges of maintaining a cadaver laboratory and staff.
- **2012-present** I have secured extramural funding USDA (\$150,000), completed learner outcomes analyses of educational interventions, as well as the dissection, image acquisition, and annotation of the *Virtual Equine Anatomy*, *Virtual Feline Anatomy*, and *Virtual Bovine Anatomy* programs. I have also created a software distribution mechanisms with more than \$50,000 in sales since 2018. This work is completed with the assistance of 2 part-time developer/programmers (Linton/Garrett), 2-3 student employees working full-time during summer months and 10-20 hours work/week during the school year, and anatomy faculty in BMS.

My specific contributions to VAA development include production of the following:

- **Virtual Equine Anatomy**
 - *thoracic limb osteology and annotation of dissection (2013)*
 - *pelvic limb dissection and osteology (2014)*
 - *head dissection and skull osteology (2015)*
- **Virtual Bovine Anatomy**
 - *pelvic limb osteology (2018)*
 - *thoracic limb osteology (2018)*
- **Virtual Feline Anatomy**
 - *skull and mandible osteology (2019)*
 - *thoracic limb osteology (2019)*
 - *pelvic limb dissection and osteology (2019)*
- **Virtual Animal Anatomy - Virtual Reality**
 - <http://www.cvmbs.colostate.edu/vetneuro/VR.html>

My specific accomplishments as Program Lead (2018-present) include:

- Completion of the **CSU Ventures Research to Market** program to improve my understanding of VAA's value proposition, target market, and market potential. Resulted in ***Invention Disclosure (INV18-084)*** for the Adobe Flash version of the program has been used to generate more than \$25,000 in individual program sales since August 2018.
- **VAA-LTI** - I initiated development of this HTML5 coded version of the software program to facilitate a subscription model of Software as a Service to other universities using a secure learning management system and a Learning Tool Interoperability (LTI) standard. Since May 2019, VAA-LTI has generated \$18,000 of direct income to CVMBS
- **VAA-Single User** - launching in 2020 <https://www.csuvtce.com/partners-and-sponsorship/virtual-canine-anatomy/>
- Current funding for VAA comes from the DVM program (\$25,000/year) and total faculty/staff BMS subsidized input to VAA program development is approximately \$250,000/year with the intention of creating a self-sustained financial model based on subscription services and limited use licensing of the 3D VR assets. **My goal as Program Lead is to have VVET financially independent by 2023.**
- **Collaborations & Engagement**
 - 2017, Faculty at the **University of Hokkaido in Japan**. As of March 2020, they have completed the translation of the program text to Japanese. We are in the process of coding this translated version to launch October 2020.
 - 2019, William Pérez, PhD, Professor of Anatomy at **Universidad de la República de Uruguay** and President of the World Association of Veterinary Anatomists. As of February 2020 the Spanish translation of the program was completed and we are in the process of coding this translated version for launch Summer 2020.
 - 2020, **UCDavis School of Veterinary Medicine**, Development of 3D VR assets and evaluation of VR in DVM teaching, invited talk at UCDavis January 2020
- **Additional Demonstrations of VAA-VR program**
 - **InterNICHE** - Leicester, England. Nick Jukes, Coordinator – Documentary Interviews (2 days, 2019) Goal of Documentary: Highlight educational practices that reduce or replace cadaver instruction.
 - **University of Hokkaido**, Anatomy Faculty visit, Fort Collins, CO (2019)
 - **CSU VTH Open House**, Fort Collins, CO (1 day, 2019)
 - **CSU DVM Alumni Weekend**, Fort Collins, CO (1 day, 2019)
 - **Veterinary Information Network**, Founder Dr. Paul Pion, Fort Collins, CO (1 day, 2019)
 - **Theriogenology Student Conference**, Savannah, GA (1 day, 2019)
 - **CSU BMS MSB Alumni Weekend**, Fort Collins, CO (1 day, 2019)
 - **Colorado Veterinary Medical Association Annual Meeting**, Keystone, CO (3 days, 2019)
 - **Veterinary Innovation Summit**, Translational Medical Institute, Fort Collins, CO (3 days, 2019)
 - **Georgia Veterinary Medical Association**, Fort Collins, CO (2 hours, 2019)
 - **UCDavis DVM Program**, Fort Collins, CO (5 hours, 2019)
 - **Louisiana State University School of Veterinary Medicine**, Baton Rouge, LA (1 day, 2019)
 - **CSU Vice President for Research Demo Day**, Fort Collins, CO (1 day, 2018-19)
 - **Zoobiquity Conference**, Fort Collins, CO (1 day, 2019)

CONTRACTS

Virtual Animal Anatomy (HTML5-LTI) Software as a Subscription As Program Lead for Virtual Veterinary Education Tools, I develop all strategies for program development, communications, pricing, including customer service, discovery, and training. From March 17-July 1, 2020 the VAA-LTI program was being provided for free in response to COVID-19. More than 100 schools (K-12, undergraduate, and professional veterinary and technician programs) from around the world were granted access to the LTI. Fifteen schools have active VAA-LTI subscriptions and many more COVID free access users have expressed their intention to either subscribe to the VAA-LTI or have their students use the single user service that is launching prior to the start of the Fall 2020 semester.

Virtual Animal Anatomy (3D VR Software) - Limited Purpose Software License

Mars, Incorporated. Mars Petcare (Future of Technology, Pet Health and Innovation)
International Network for Humane Education (InterNICHE). Program promotion and distribution of humane alternatives in education <http://www.interniche.org/cs/node/5941>

Continuing Education and Professional Development since 2015 (Approx. No. of Hours Spent Per Year: ANH/Y)

- 2019 CSU CVMBS Inclusive Pedagogy Training. ANH/Y: 10
- Who are you Teaching-The Identity of Your Students
 - Who you are- Assumptions and Biases of the Instructor
 - How are you Teaching- Pedagogy and Praxis- Part 1
 - How are you Teaching- Pedagogy and Praxis- Part 2
 - What are you Teaching- Examining Your Curriculum
- CSU CVMBS Teaching Academy Seminars. ANH/Y: 2
- Strategies for Making the Most Important Ideas in a Lecture Clear to Students
 - Conversations About Medical Education: Team Based Learning
- CSUVentures State of Innovation: Education Series - Considerations for Protecting Intellectual Property for Software, AI, & AR/VR Applications by Bob O'Loughlin. ANH/Y: 2.
- Colorado State University's 80th Annual Conference for Veterinarians. Fort Collins, CO. ANH/Y: 16
- Regional Teaching Academy VETS 2.0 Curriculum Development Workshop, UC Davis, CA. ANH/Y: 20
- Society for Theriogenology Meeting, Savannah, GA. ANH/Y: 32 CE Hours
- 2018 – 2019 Mentoring Program, "ENCIRCLE," CSU - Standing Committee on the Status of Women Faculty & Office of the Vice Provost for Faculty Affairs. ANH/Y: 3
- 2018 Conference Attendance, "Record Freshmen Enrollment: What to Expect in the Future and What We Can Learn from the Past," TILT PDI CSU. Fort Collins, CO ANH/Y: 2
- Short Course, "Research to Market (R2M) - Virtual Animal Anatomy," CSU Ventures, Launchpad, September - December 2018. Fort Collins, CO. ANH/Y: 100
- CSU Supervisor Training, "Inclusive Excellence Part 1" ANH/Y: 2.5
- CSU Supervisor Training, "Effective Teams" ANH/Y: 2.5
- CSU Supervisor Training, "Mindset for Supervisors" ANH/Y: 3
- CSU Supervisor Training, "Inclusive Excellence Part 2" ANH/Y: 2.5
- CSU Supervisor Training, "Emerging Women Leaders Webinar" ANH/Y: 1.5
- CSU Supervisor Training, "Effective Communication and Conflict Resolution Skills" ANH/Y: 2
- CSU Supervisor Training, "Systems Thinking: Your Role in the Bigger Picture" ANH/Y: 3
- CSU Supervisor Training, "Rules of the Road" ANH/Y: 4
- Colorado State University's 79th Annual Conference for Veterinarians. ANH/Y: 16 CE
- 2014 – 2018 CSU CVMBS Leadership Development Group Training with Cindy Anderson Consulting, LLC. Monthly leadership seminars and workshops. Fort Collins, CO. ANH/Y: 50
- 2017 – Society for Theriogenology Annual Meeting, Fort Collins, CO. ANH/Y: 16
- Colorado State University CVMBS Fall Education Seminar "Utilizing Adaptive Instruction and Adaptive Assessments in CVMBS", Fort Collins, CO. ANH/Y: 1
- 2016 – Society for Theriogenology Annual Meeting, Baltimore, MD. ANH/Y: 16
- Colorado State University's 77th Annual Conference for Veterinarians, Fort Collins, CO. ANH/Y: 16
- 2015 – Colorado State University's 76th Annual Conference for Veterinarians, Fort Collins, CO. ANH/Y: 16
- Communication Coaching Skills Workshop, Fort Collins, CO. Conducted by Dr. Jane Shaw of CSU, this 2-day program is designed for practitioners, communication teachers and other educators responsible for coaching individuals or teams, facilitating small groups, supervising colleagues and conducting in-the-moment coaching for hospital or clinic teams. ANH/Y: 16

CV SECTION 3: EVIDENCE OF TEACHING AND ADVISING EFFECTIVENESS

TEACHING:

For an evaluation of these activities by Dr. John Walrond (Chair, BMS Undergraduate Curriculum Committee), please visit my website at <https://christiannemagee.com/teaching-%26-advising>

Table 1. Teaching Summary (since 2014): Credit Hours/Student (credits taken by each student) **Total Student Credit Hours** (Credit Hours/student x students); **Student Hours** (% effort x total student credit hours); **Course Hours** (% effort x course credit hours/student); *Course Director; #Course Support; †lab credits included in total course credit hours, ‡effort for laboratory credits not included in summary.

Year	Sem	Class	My % Effort/ Course	Credit Hours/ student	Enrolled Students	Total Student Credit Hours	Student Hours	Course Hours
2014	Fa	BMS695F# - Independent Study-Gross Anatomy	95%	1 to 2	2	3	2.9	0.95
2014	Fa	VM616# - Functional Anatomy - Lab 9 cr (5-8-1)	10%	0	138		0.0	0
2014	Fa	VM618# - Veterinary Physiology and Histology	7%	7	138	966	67.6	0.49
2014	Fa	VM722# - Veterinary Pharmacology	1%	4	136	544	5.4	0.04
2014	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	90%	4	14	56	50.4	3.6
2014	Sp	BMS305* - Domestic Animal Gross Anatomy	90%	4	75	300	270.0	3.6
2014	Sp	BMS305*† - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	52	0	0.0	0
2014	Sp	BMS305*† - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	37	0	0.0	0
2014	Sp	BMS384* - Supervised College Teaching	100%	1 to 2	20	27	27.0	1
2014	Sp	BMS531* - Domestic Animal Dissection	90%	3	33	99	89.1	2.7
2014	Sp	BMS784* - Supervised College Teaching	100%	1 to 3	2	4	4.0	1
2014	Sp	BMS495* - Independent Study and Honors	95%	1 to 2	13	15	14.3	0.95
2014	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	17	34	30.6	1.8
2014	Sp	BMS684* - Supervised College Teaching	100%	1 to 3	12	18	18.0	1
2014	Sp	BMS695F* - Independent Study-Gross Anatomy	95%	1 to 3	5	7	6.7	0.95
2015	Fa	BMS495* - Independent Study	95%	1 to 3	3	6	5.7	0.95
2015	Fa	BMS695F* - Independent Study-Gross Anatomy	95%	1	2	2	1.9	0.95
2015	Fa	VM616#‡ - Functional Anatomy - Lab 9 cr (5-8-1)	10%	0	139	0	0.0	0
2015	Fa	VM618# - Veterinary Physiology and Histology	14%	7	138	966	135.2	0.98
2015	Fa	VM722# - Veterinary Pharmacology	1%	4	138	552	5.5	0.04
2015	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	90%	4	13	52	46.8	3.6
2015	Sp	BMS305* - Domestic Animal Gross Anatomy	90%	4	92	368	331.2	3.6
2015	Sp	BMS305*† - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	71	0	0.0	0
2015	Sp	BMS305*† - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	34	0	0.0	0
2015	Sp	BMS384* - Supervised College Teaching	100%	1 to 2	22	30	30.0	1
2015	Sp	BMS495* - Independent Study - Honors	95%	1	13	13	12.4	0.95
2015	Sp	BMS531* - Domestic Animal Dissection	90%	3	33	99	89.1	2.7
2015	Sp	BMS495* - Independent Study	95%	1 to 2	5	8	7.6	0.95
2015	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	16	32	28.8	1.8
2015	Sp	BMS684* - Supervised College Teaching	100%	1 to 5	12	26	26.0	1
2015	Sp	BMS695F* - Independent Study-Gross Anatomy	95%	1 to 2	6	10	9.5	0.95
2016	Fa	BMS495* - Independent Study	95%	1	1	1	1.0	0.95
2016	Fa	VM616#‡ - Functional Anatomy - Lab 9 cr (5-8-1)	5%	0	139	0	0.0	0

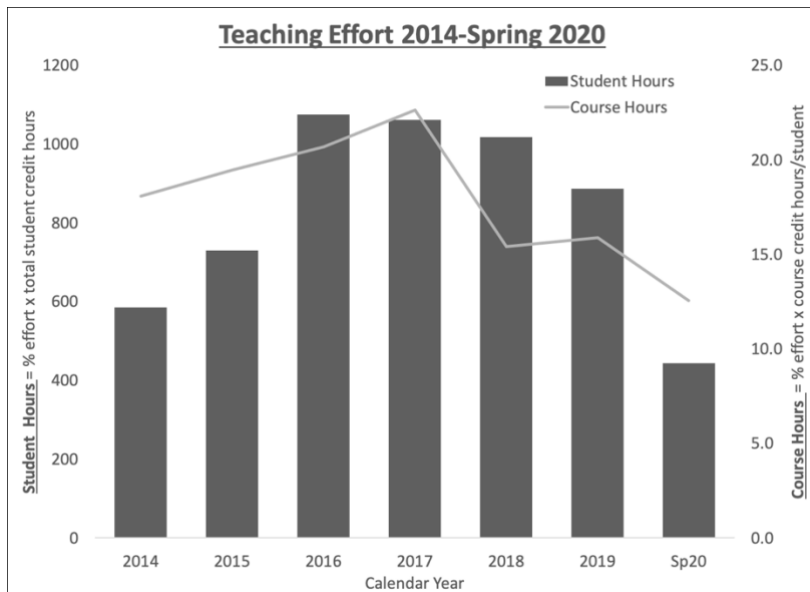
TABLE 1 TEACHING SUMMARY - CONTINUED (PAGE 2 OF 3)

2016	Fa	VM618* - Veterinary Physiology and Histology	50%	7	137	959	479.5	3.5
2016	Fa	VM722# - Veterinary Pharmacology	1%	4	135	540	5.4	0.04
2016	Sp	BMS305* - Domestic Animal Gross Anatomy	90%	4	107	428	385.2	3.6
2016	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	90%	4	10	40	36.0	3.6
2016	Sp	BMS305* _φ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	43	0	0.0	0
2016	Sp	BMS305* _φ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	74	0	0.0	0
2016	Sp	BMS531* - Domestic Animal Dissection	90%	3	26	78	70.2	2.7
2016	Sp	BMS496D* - Honors: Animal Gross Anatomy	95%	1	10	30	28.5	0.95
2016	Sp	BMS684* - Supervised College Teaching	90%	1 to 5	4	13	11.7	0.9
2016	Sp	VM795* - Independent Study-LA Anatomy	80%	1	12	12	9.6	0.8
2016	Sp	BMS384* - Supervised College Teaching	90%	1 to 2	15	19	17.1	0.9
2016	Sp	BMS495* - Independent Study	95%	1 to 3	3	6	5.7	0.95
2016	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	14	28	25.2	1.8
2017	Fa	BMS495* - Independent Study	95%	1	1	1	1.0	0.95
2017	Fa	VM616# _χ - Functional Anatomy - Lab 9 cr (5-8-1)	5%	0	139	0	0.0	0
2017	Fa	VM616# _χ - Functional Anatomy - Recitation 9 cr (5-8-1)	1%	0	139	0	0.0	0
2017	Fa	VM618* - Veterinary Physiology and Histology	50%	7	140	980	490.0	3.5
2017	Fa	VM722# - Veterinary Pharmacology	1%	4	136	544	5.4	0.04
2017	Sp	BMS305* - Domestic Animal Gross Anatomy	90%	4	96	384	345.6	3.6
2017	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	90%	4	5	20	18.0	3.6
2017	Sp	BMS305* _φ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	39	0	0.0	0
2017	Sp	BMS305* _φ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	90%	0	62	0	0.0	0
2017	Sp	BMS496D* - Honors: Animal Gross Anatomy	95%	1	6	36	34.2	0.95
2017	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	15	30	27.0	1.8
2017	Sp	BMS684* - Supervised College Teaching	90%	1 to 5	5	12	10.8	0.9
2017	Sp	VM795* - Independent Study- Research	100%	1	1	1	1.0	1
2017	Sp	VM795* - Independent Study- LA Anatomy	80%	1	25	25	20.0	0.8
2017	Sp	BMS384* - Supervised College Teaching	90%	1 to 3	18	33	29.7	0.9
2017	Sp	BMS495* - Independent Study	95%	1 to 2	7	8	7.6	0.95
2017	Sp	BMS531* _# - Domestic Animal Dissection	90%	3	26	78	70.2	2.7
2017	Su	BMS495* - Independent Study	95%	1	1	1	1.0	0.95
2018	Fa	VM616# _χ - Functional Anatomy - Recitation 9 cr (5-8-1)	1%	0	137	0	0.0	0
2018	Fa	VM618* - Veterinary Physiology and Histology	50%	7	137	959	479.5	3.5
2018	Fa	VM722# - Veterinary Pharmacology	1%	4	139	556	5.6	0.04
2018	Sp	BMS260# - Biomedical Sciences - Honors Recitation	1%	1	20	20	0.2	0.01
2018	Sp	BMS260# - Biomedical Sciences - Recitation	1%	1	52	52	0.5	0.01
2018	Sp	BMS305* - Domestic Animal Gross Anatomy	60%	4	112	448	268.8	2.4
2018	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	60%	4	9	36	21.6	2.4
2018	Sp	BMS305* _φ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	60%	0	75	0	0.0	0
2018	Sp	BMS305* _φ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	60%	0	46	0	0.0	0

TABLE 1 TEACHING SUMMARY - CONTINUED (PAGE 3 OF 3)

2018	Sp	BMS384* - Supervised College Teaching	60%	1 to 3	33	48	28.8	0.6
2018	Sp	BMS495* - Independent Study	60%	1 to 4	3	6	3.6	0.6
2018	Sp	BMS496D* - Honors: Animal Gross Anatomy	95%	1	9	81	77.0	0.95
2018	Sp	BMS531* - Domestic Animal Dissection	60%	3	42	126	75.6	1.8
2018	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	16	32	28.8	1.8
2018	Sp	BMS684* - Supervised College Teaching	60%	1 to 5	9	19	11.4	0.6
2018	Sp	VM795* - Independent Study-LA Anatomy	70%	1	24	24	16.8	0.7
2019	Fa	VM616# χ - Functional Anatomy - Recitation 9 cr (5-8-1)	1%	0	138	0	0.0	0
2019	Fa	VM618* - Veterinary Physiology and Histology	40%	7	138	966	386.4	2.8
2019	Fa	VM722# - Veterinary Pharmacology	1%	4	136	544	5.4	0.04
2019	Sp	BMS695F* - Independent Study-Gross Anatomy	60%	1	5	5	3.0	0.6
2019	Sp	BMS305* - Domestic Animal Gross Anatomy	60%	4	114	456	273.6	2.4
2019	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	60%	4	11	44	26.4	2.4
2019	Sp	BMS305* ϕ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	60%	0	79	0	0.0	0
2019	Sp	BMS305* ϕ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	60%	0	46	0	0.0	0
2019	Sp	BMS384* - Supervised College Teaching	60%	1 to 2	14	21	12.6	0.6
2019	Sp	BMS495* - Independent Study	60%	1 to 2	7	10	6.0	0.6
2019	Sp	BMS496D* - Honors: Animal Gross Anatomy	95%	1	10	90	85.5	0.95
2019	Sp	BMS531* - Domestic Animal Dissection	60%	3	22	66	39.6	1.8
2019	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	17	34	30.6	1.8
2019	Sp	BMS684* - Supervised College Teaching	60%	1	6	6	3.6	0.6
2019	Sp	VM795* - Independent Study-LA Anatomy	70%	1	19	19	13.3	0.7
2019	Su	BMS495* - Independent Study	60%	1 to 2	1	1	0.6	0.6
2020	Sp	BMS305* - Domestic Animal Gross Anatomy	60%	4	122	488	292.8	2.4
2020	Sp	BMS305* - Domestic Animal Gross Anatomy - Honors	60%	4	8	32	19.2	2.4
2020	Sp	BMS305* ϕ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	60%	0	76	0	0.0	0
2020	Sp	BMS305* ϕ - Domestic Animal Gross Anatomy - Lab 4 cr (3-3-0)	60%	0	54	0	0.0	0
2020	Sp	BMS384* - Supervised College Teaching	60%	1 to 3	21	32	19.2	0.6
2020	Sp	BMS495* - Independent Study	60%	1 to 3	4	6	3.6	0.6
2020	Sp	BMS496D* - Honors: Animal Gross Anatomy	95%	1	8	8	7.6	0.95
2020	Sp	BMS531* - Domestic Animal Dissection	60%	3	31	93	55.8	1.8
2020	Sp	BMS633* - Domestic Animal Anatomy-Case Discussions	90%	2	15	30	27.0	1.8
2020	Sp	BMS684* - Supervised College Teaching	60%	1 to 2	6	9	5.4	0.6
2020	Sp	BMS695F* - Independent Study-Gross Anatomy	60%	1 to 2	2	3	1.8	0.6
2020	Sp	VM795* - Independent Study-LA Anatomy	80%	1	14	14	11.2	0.8

Figure 1. Summary of Table 1 Data to Demonstrate Teaching Effort Changes (2015- Spring 2020)*



*In a separate calculation of my teaching effort by Dr. Erica Suchman (Professor, Department of Microbiology, Immunology, Pathology (MIP) at CSU), my 2016-17 teaching effort was determined to be >100%. Per Dr. Suchman: 12 hours per week (credit) is generally what 100% teaching would be (according to an extensive comparison of many schools by retired CSU CVMB faculty Dr. Sherry Stewart). In MIP, someone who has a 65% teaching load should teach around 7-8 credits (although this would be more contact hours if the faculty is teaching a lab). Faculty are given one credit for being a course coordinator for each course. For example, a faculty teaching a 3 credit lecture (3 hours per week) and a 2 credit lab (4 hours per week), and if they were coordinating both, would get 4 credits for the lecture and 3 for the lab, totaling 7 credits and 7 of 12 total contact hours, which would be ~65% teaching effort.

Courses as Course Director: I am responsible for all programmatic and curricular development, content, delivery, and assessment. I provide a great deal of mentoring, advising, and individualized support to my students.

CRN64749 VM618 Professional Veterinary Medicine – Histology and Physiology, 7 cr, Fall 2016-20. Avg. 138 students
I have aligned the physiology content with histology and gross anatomy, as well as the University of Alaska Fairbanks course. In addition to the leadership necessary for execution of the course throughout the semester, my lectures have included Endocrinology, Cell Biology, Neural Signaling (11 hrs, 2016-19), Pulmonary Physiology (11hr, 2017-18), and Cardiovascular Physiology (2015). I work with the DVM Curriculum Committee and the Capstone Exam I coordinator to ensure that VM618 learning objectives are aligned with the Core Competencies for our DVM students and the Capstone Examination questions. DVM students must pass Capstone I exam to matriculate to Year 2. Major ongoing efforts in 2020 are course renovation for 100% online instruction Fall 2020.

CRN26792 VM795-004 Large Animal Anatomy Independent Study, 1 cr, Spring 2016-20 (12-25 students)
This curriculum focuses on dissection of fresh and embalmed equine, bovine, ovine, caprine, and porcine specimens as well as canine and feline specimens for comparative anatomy. The experience is enriched with other learning opportunities including advanced clinical applications such as nerve blocks, nasogastric tube placement, and surgical approaches. I spend on average 4 hrs/week with these students.

CRN11434(18480) BMS305-001(201) Domestic Animal Gross Anatomy(Honors), 4 cr, Spring 2012-20, Avg. 120 students
This course is a survey of domestic animal anatomy using prosected specimens. I provide an average of 19 (of 45) hrs lecture/semester, oversee two regular laboratory sections of 2 hours each/week, and organize 12 additional “open lab” hours each week for students in our laboratory facility that are facilitated by our GTAs (BMS684) and TAs (BMS384). I gave fewer hours of lecture SP19, but provided regular input and lecture attendance for the new instructor (Andrew Garrett).

CRN26011 BMS496D-235 Honors Breakout Session BMS305, 1 cr, Spring 2013-20, Avg. 10 students
I developed this is a case-based study of anatomy for the University Undergraduate Honors students enrolled in BMS305 that integrates physiology and developmental anatomy with the basics of clinical reasoning. The students assemble a canine skull, thoracic and pelvic limbs (canid, equid, bovid) that they are able to keep, and give final course reflective presentations.

CRN11447 BMS 531-L01 Domestic Animal Dissection, 3 cr, Spring 2012-20, Avg. 30 students
This dissection course provides the specimens used in the BMS305 class and uses the didactic content taught in BMS305 to ask for higher order integration of anatomical concepts. I currently spend 6 of 9 hrs of scheduled laboratory time each week for this course to guide dissections and learning.

CRN18390 BMS 633-001 Domestic Animal Anatomy – Case Discussions, 2 cr, Spring 2012-20, Avg. 16 students

This is an advanced, case-based study of anatomy for development of critical thinking and problem-solving skills. Group case presentations are used to develop communication and teamwork skills, with individual unit assessments. The course directly prepares graduate students for the Comprehensive Examination in Animal Anatomy. I attend DVM Continuing Education (CE) events each year and review current literature so that I may continue to develop new anatomy-related clinical case studies for this course, and provide an up to date clinical perspective.

CRN11443 BMS 384-001 Supervised College Teaching, 1-3 cr, Spring 2012-20, Avg. 25 students

Teaching assistants (TAs) have completed BMS305 with a B or higher and are typically co-enrolled in BMS531. TAs improve the student: support ratio in BMS305 and staff BMS305 open labs (12 hrs/week). In 2014, I initiated a weekly (1 hr) TA meeting to provide them with mentorship, review teaching strategies, and prepare the team for upcoming laboratory sessions. TAs assist with set up and proctoring of laboratory assessments.

CRN11443 BMS 684-001 Supervised College Teaching, 1-3 cr, Spring 2012-20, Avg. 5 students

Teaching assistants (TAs) have completed BMS531 with a B or higher and improve student: support ratio in BMS531. Participation in BMS384 TA meetings for mentorship is required, and these students are typically co-enrolled in BMS495. BMS684 enrollment also includes 2 Graduate Teaching Assistants who are mentored and trained annually to provide support for the animal anatomy BMS305/531 courses.

CRN50293(Su)/61772(Fa)/11445(Sp) BMS495 or 695F-001 Independent Study, 1-2 cr, 2012-20, Avg. 12 students/yr

These students will complete a variety of assignments for credit including but not limited to clinical experience in conjunction with a skeletal assembly, and a reflective, anatomy-based, clinical case report. Students who have previously completed BMS531 may register for BMS695F to participate in BMS795.

BMS3XX Applied Food and Fiber Animal Anatomy Course – 3 cr

Launching Fall 2021, in the design phase now and an Aim of the USDA-HEC grant. This course will be a case-based survey of those anatomically related diseases in chickens, camelids, sheep, goats, cattle, and pigs. Each unit will have 4 major “problems” from each of these major production species that the students will use Team Based Learning strategies to solve.

Courses as Lecturer or Course Support (since 2015): *I provide guest lectures, support to laboratory teaching, and assist with exam question development or grading when related to my area of support. Learning objectives are developed in conjunction with the course director to ensure continuity in the curriculum.*

CRN64744VM 616 Professional Veterinary Medicine – Functional Anatomy, 9 cr, Avg. 138 students, 12 hours/week

Fall 2018-2019, floor anatomist and course support as needed, case study/recitation (1 hr)

Fall 2016-2017, floor anatomist (32 hrs of equine clinical and reproductive anatomy) case study/recitation (1 hr)

Fall 2014-2015, floor anatomist (64 hrs for Head and Thorax, Abdomen, Pelvis Units)

CRN64749 VM618 Professional Veterinary Medicine – Histology and Physiology, 7 cr, Avg. 138 students

Fall 2015, Cardiovascular Physiology (11 hrs), Endocrinology, Nerve and Muscle Cell Biology (11 hrs)

Fall 2014, Endocrinology, Nerve and Muscle Cell Biology (11 hrs)

CRN64760 VM722-001 Professional Veterinary Medicine – Pharmacology, 4 cr, Avg. 138 students

Fall 2015-19, Capstone Lecture “Inflammatory Airway Disease” (1 hr)

CRN15460 BMS260-R01, BMS 260 Introduction to Biomedical Sciences, 72 students

Spring 2018 Faculty Guest Lecturer “From research to teaching: how are things at your end?” (1 hour)

Evidence of Teaching Effectiveness

[A review of my teaching activities has been provided by Dr. John Walrond \(Chair, BMS Undergraduate Curriculum Committee\). An "Extended Summary" was provided to Dr. Walrond for this review. Each course in the Extended Summary has its own summary of course specific changes with supporting evidence as indicated below. Please visit my website \(<https://christiannemagee.com/teaching-%26-advising/>\) or use the hyperlinks provided for access to these materials.](https://christiannemagee.com/teaching-%26-advising/)

Course Syllabi, Assignments, and Other Materials - provided to Dr. Walrond in the [Extended Summary document](#)

Course 1: BMS305-001/201 Domestic Animal Anatomy - [Summary](#)

- Global Learning Objectives
- Syllabus Spring 2020 Pre-COVID -19 (Magee, Course Director)
- Syllabus Spring 2020 Post-COVID-19 (Magee, Course Director)
- How to succeed in BMS305

Course 2: BMS305 Honors Breakout Section - [Summary](#)

- Course Proposal for CSU Honors Program
- Syllabus Spring 2020 (Magee, Course Director)

Course 3: BMS531-001 Domestic Animal Anatomy Dissection - [Summary](#)

- Syllabus Spring 2020
- Syllabus Spring 2020 - COVID changes
- BMS531 Unit 1 Pelvic Limb Exam 2013 and 2020

Course 4: BMS633 Animal Anatomy Case Studies - [Summary](#)

- Syllabus Spring 2020
- Thoracic Limb Unit Quizzes for 2011 and 2020
- Head and Neck Unit Quizzes for 2011 and 2020

Courses 5 and 6: BMS384/684 Supervised College Teaching Domestic Animal Anatomy - [Summary](#)

- Syllabus BMS384 for BMS305 Spring 2020
- Syllabus BMS684 for BMS531 Spring 2020
- Syllabus BMS384/684 for BMS305/531 Spring 2020 - COVID changes

Course 7: VM795-004 Large Animal Anatomy and Dissection - [Summary](#)

- VM795-004 Course Syllabus 2020
- CVMBS Strategic Plan Goal - Enhancing Diversity in Anatomical Instruction

Peer Evaluations of Teaching

1. 2015 - Drs. Andrew West (*Director CVMBS Academy for Learning and Teaching*) and Sherry Stewart (*Professor, Clinical Sciences*)
2. 2017 - Dr. Andrew West (*Director CVMBS Academy for Learning and Teaching*)

Student Course Surveys

-[CSU DVM Class of 2023 Gratitude Statements](#)

-For a comprehensive summary, please [Quantitative Course Survey Data and Qualitative Course Survey Data \(Educator's CV Section III\)](#)

Examples of Course Improvements

- Please see: Courses 1 (BMS305), 3 (BMS531), 4 (BMS633), 5 and 6 (BMS384/684) in the [Extended Summary](#)
- Please see BMS305/531 Laboratory Manual in the [Extended Summary](#)

Development of New Courses

-Please see: Courses 2 (BMS496D) and 7 (VM795) in the [Extended Summary](#)

ADVISING:

SUMMARY:

Current Graduate Committee Memberships (excluding those chaired):

_____	# Plan C
16	# Plan B
_____	# Plan A
_____	# MS/MA (no plan)
1	# PhD
4	# DVM

Graduate Committee Memberships (for past 5 years, not including those above)

_____	# Plan C
65	# Plan B
_____	# Plan A
2	# MS/MA (no plan)
_____	# PhD
3	#DVM

UNDERGRADUATE STUDENTS:

*Undergraduate Senior Honors Thesis *indicates matriculation to DVM program*

Lexxee Wilson, Fall 2020 – “Building teaching models for equine biomechanics” In progress

Jordan Sandoval, Fall 2019. “Comparative Anatomy of High Altitude Disease in Camelids and Bovids.”

Sera Lee*, Spring 2018. “Owner Satisfaction with Canine Orthotic Device Use.” **Manuscript submitted to PLOS ONE May 27, 2020.**

Jordan Tarbuton*, Fall 2018. “Bovine Claw Zone Anatomy as VR Outreach Tool” **Preliminary data for USDA NIFA HEC grant "Virtual Bovine Anatomy"**

Marion Steiblen*, Fall 2018. "An Equine Medicine Case Study – From Dystocia to Discharge."
 Carli Evatz*, Spring 2017. "Equine Dentistry: A Case Study".
 Rowan Seabolt*, Fall 2017. "Establishing and Characterizing Transgenic Mice Expressing a Firefly-luciferase Reporter Driven by the Ovine GnRHR Promoter" **Manuscript in preparation**
 Sabrina Litzelman, Fall 2017. "Comparison of Protocols and Standards of Care with a Spectrum of Veterinarians"
 Ellie Beniston*, Fall 2017. "Diabetes and Uveitis: A comparative analysis of causes, connections, and treatments in canids and humans".
 Shelly McDaniel*, Fall 2016 "Social Media and the Equine Industry". **Accepted for publication in JEVS May 2020.**
 Hunter Kothenbeutel*, Fall 2016. "A Comprehensive Review of Onychectomy (declaw) of Domestic Cats".
 Alyx Moose*, Spring 2015. "Surveying the Potential Use of Shelter Animals for Service Function".
 Alyssa Carson*, Fall 2015. "Uterine Torsion in Llamas and Alpacas: Review Study and Design".
 Katherine Watts, Fall 2015. "He Made Their Glowing Colors, and Made their Tiny Wings: Short Stories of Veterinary Medicine".
 Amy Scott*, Spring 2014. "BMS305 Reference Manual: Comparative Anatomy of the Canid, Equid and Bovid; Developing Teaching Aids for a Comparative Approach to Anatomy".
 Sophia Nelson*, Spring 2014. "A Comparative Analysis of Adjunct Therapies in Equine Sports Medicine".
 Katherine Yunker*, Spring 2014. "A Comparison of Fixation Techniques for Diaphyseal Femoral Fracture in Canids".
 Hannah C. Lewis*, Spring 2014. "Branching of the Abdominal Aorta and Symptoms Related to Blocked Blood Flow Restrictions".
 Kelsey Jung*, Fall 2013. "Revealing the Role of Estrogen Receptor alpha (ER α) via Adenoviral Delivery of siRNA for Knockdown of ER α in Gonadotrope Cells".
 Brandi Heckel*, Fall 2012. "What Domestic Ruminant Anatomy Tells Us About Feeding Wild Cervids".
 Nicole Mikoni*, Fall 2012. "Femoral Fracture Repair".

GRADUATE STUDENTS:

Department of Biomedical Sciences Master of Science (1 year, MS-B) program, Avg 16 students/year, 2012-current
 Academic Advisor for animal anatomy concentration students. This includes MS-B program admissions, student support, mentorship, and grading of annual Comprehensive Exams in animal anatomy. Most students are applying to veterinary school and hoping to demonstrate academic capacity to DVM admissions panels.
 Viviane C Leite Gomes. PhD student in Clinical Sciences at Louisiana State University, Baton Rouge, LA. Advisor, Jenny Sones, DVM, PhD, DACT. 2019-present. Combined PhD/Theriogenology Residency program. Interest in kisspeptin during equine pregnancy. Dr. Gomes visited CSU in May 2019, I visited LSU in November 2019.
 Saleh Salman, Master of Science in Animal Science at CSU, 2018-2019. Fulbright Scholar. PhD at University of Connecticut started Fall 2019.
 Sophia Nelson. 2015-2016. Master of Science in Student Affairs in Higher Education. Unique, joint program designed for Ms. Nelson to allow her to complete the MS prior to matriculating to CSU DVM program Fall 2015.
 Jason Frederick Martin. CSU DVM Class 2020. Combined BMS PhD Anatomy Education after DVM matriculation. Jason's PhD work will be focused on strategies for successful learning outcomes following integration of virtual reality anatomical teaching tools in veterinary education.
 DVM Faculty Advising program. Avg 1-2 DVM students/year. 2013-current. Advising relationship initiated either prior to DVM program enrollment or in Year 1. Provide faculty mentorship until graduation.

POSTDOCTORAL STUDENTS/RESEARCH ASSOCIATES:

2019-present Olivia Arnold, PhD, (Department of Environmental and Radiological Health Sciences, CSU)
 2017-present Kelly S. Kirkley, DVM, PhD – co-advised with Dr. Colin M. Clay

FACULTY MENTORING:

2019-present Kimberley Jeckel, PhD (Department of Biomedical Sciences, CSU)

LETTERS OF RECOMMENDATION (since 2012):

- DVM program applicants (VMCAS +/- supplemental packets), 10-15 annually
- DVM students seeking externship or research opportunities, 3-5 annually
- Other requests from students, 2-3 annually

OTHER EVIDENCE OF ADVISING EXCELLENCE:

2017-20 - Nomination for Jack E. Cermak Advising Award

CV SECTION 4: Evidence of Outreach/Service/Engagement

COMMITTEES

College of Veterinary Medicine and Biomedical Sciences

2019-present

CVMBBS Representative to CSU's Faculty Council (2 year term)

DVM Curriculum Renewal Task Force (5% effort) – my role is to provide basic sciences (anatomy, physiology) and BMS input to proposed changes in the DVM curriculum. Task Force conducts weekly meeting with additional efforts to develop goals (first draft accomplished Fall 2019), assess faculty input (ongoing) and draft a strategic plan in 2020 for DVM curricular changes - see letter from Task Force Co-Chair, Dr. Paul Avery (<https://christiannemagee.com/service-%26-outreach>)

2013 – 2019 *DVM Admissions Committee*

2014-2019 Multiple Mini-Interview Committee, Question Development and Interviewer Training – I had a major role in the development of the MMI for CSU through three different Directors of DVM Admissions over the course of 4 years. The DVM applicant is invited to the MMI based on holistic review of their application, and acceptance decisions currently utilize the MMI score (50%) and the holistic packet review (50%).

2015, 2016 Alaska 2+2 admissions selection committee

2014, 2015 WICHE admissions selection committee

2014-2016 *DVM Curriculum Committee*

Department of Biomedical Sciences

2020

CSU/CU MD program Educational Specialist Search Committee, ongoing

2019

BMS Department Head Search Committee, ongoing

DVM Instructional Technologist Search Committee (Hired Sonja Berkenpas)

Director of Animal Anatomy Programming and Strategic Planning. Faculty and Staff Supervised: Jeremy Delcambre, DVM, MS (Assistant Professor), Robert E. Lee, PhD (Anatomy Lab Coordinator), Andrew Garrett, MS (Instructor, VAA Developer), Andrea Linton, MS (Instructional Designer, VAA Programmer), Brittany Runyan, MS (Research Associate, 20% effort)

2018

Anatomy Education Strategic Planning. Effort included bringing in an outside consultant (Cindy Anderson Consulting) and included neuro, human, animal, outreach teams and integration with physiology teaching as the HEOC building, UG umbrella major, and CU/CSU medical program are launched. Ms. Anderson is no longer a consultant of CSU; however, these efforts have resulted in a detailed plan for curricular and program development around anatomy and physiology.

2017

Assistant Head/Chair of the DVM & Clinical Services Committee, ongoing

DVM Lab Coordinator Search Committee, Chair (Hired Dr. Julie Becker)

2015

Research and Facilities Committee, ongoing

2014

Program Review Committee

2013

Graduate Education Committee, MS-B Steering and Admissions Sub-Committees - ongoing

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

2019-present Teaching Academy Fellow, Consortium of West Region Colleges of Veterinary Medicine, member of Faculty Development Working Group

2016-present Colorado State University Center for the Analytics of Learning and Teaching, PI for 3D Visualization in Domestic Gross Anatomy.

2007-present American College of Theriogenologists, Question Development Committee member 2008-2011

2006-present Society for Theriogenology

2009-2014 The Endocrine Society

2007-2014 Society for the Study of Reproduction,

Licensed to practice veterinary medicine with USDA certification* in Colorado*, Massachusetts*, and New Hampshire

Scientific Journal Reviewer

Domestic Animal Endocrinology
Anatomia, Histologia, Embryologia
European Journal of Obstetrics & Gynecology and Reproductive Biology
Biology of Reproduction
Reproduction
Theriogenology
Clinical Theriogenology

OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH (since 2015)

Zoetis Pre-Veterinary Discovery Camp, College of Veterinary Medicine and Biomedical Sciences, CSU

Planned for summer 2020 but put on hold as result of COVID-19, this camp is in partnership with the Alliance Center at CSU to develop an opportunity for students from diverse backgrounds who would otherwise not have this type of opportunity, to learn about careers in veterinary medicine. Funded by Zoetis, Inc. (\$50,000) the camp is intended to host approximately 20 students for 6 nights, 7 days in the CSU dormitories in the first year, including students from Western Region DVM Consortium states (i.e. California, Nevada, Oregon, etc.). Campers will be paired with an Alliance Summer Institute alumnus as a primary counselor, as well as an anatomy counselor from the CVMBS UG/G/DVM program. Campers will dissect real anatomical specimens, use case studies to understand applied anatomy, study comparative anatomy using virtual anatomy. The Pre-Veterinary Discovery Camp also gives CSU students the opportunity to provide community service by teaching anatomy and mentoring campers. With the help of Heather Hall, I am designing the camp curriculum, and will teach it with support from faculty, staff, and students in CVMBS. Major themes will include: 1) exploration of the veterinary profession, including travel to National Western and exposure to animal models in research; 2) pathways to veterinary medicine; 2) topics in veterinary medicine including debt awareness and repayment programs, wellness, leadership and communication skills

Anatomy Camp, Department of Biomedical Sciences, CSU

Summer 2016-2019; cancelled 2020 due to COVID-19: This academic camp for high school students uses hands-on learning to create an enriched learning environment. Many campers are considering pre-professional majors in college and the primary goal of the camp is to engage high school students in health education and to encourage their interest in college STEM majors. Campers dissect real anatomical specimens, use case studies to diagnose medical problems, and study cross sectional anatomy using virtual anatomy. Anatomy Camp also gives CSU students the opportunity to provide community service by teaching anatomy and mentoring campers. I provide the Suture Clinic portion of the camp as well as a source of advising/mentorship for counselors and campers, and faculty support for the program.

Colorado 4-H State Conference, Fort Collins, CO

Virtual Bovine Anatomy Workshops 2018-19; cancelled 2020 due to COVID-19: – Presentation for high school 4-H members on CVMBS major(s) and career paths, as well as a wetlabs with anatomical specimens and VAA-VR demos

DVM Tutoring Program, CVMBS, CSU

Summer 2018 I worked with Dr. Andrew West, Director of the CVMBS Academy for Teaching and Learning, to revamp the DVM Tutoring program to include a summer Capstone review as well as a new Canvas based Group Tutoring program for each of the major DVM year 1 and 2 courses beginning Fall 2018. I now supervise 1 program coordinator, a DVM Program Teaching Assistant (DPTA) for each of the major courses, and the 2-3 Student Assistant Study Session (SASS) Coordinators who facilitate each of the weekly group study hall sessions. The Fall semester is initiated with Echo recorded “How to be successful in vet school” feedback sessions for 1st year DVM students, as well as training and support for the tutors to improve their teaching skills. 2019 marks the program’s second year, student surveys and course performance evaluation demonstrate a continued reduction in dependence on 1-1 tutoring for and satisfactory student outcomes.

MSPro Café Workshop, Department of Biomedical Sciences, CSU

September 2016-19: Led a 2 hour Suture Clinic for 20 MS students using the Canvas teaching module. Assisted by 2-3 other PA/MD/DVMs

Biomedical Sciences Student Association and Pre-Vet Club – Suture Clinic Level 1, CSU

November 2019: I convinced the two student organizations to work together to offer an introductory (Level 1) suture clinic. The 60 student suture lab was facilitated by me with the help of 15 club officers who had attended a previous suture clinic. The plan is to host a Level 2 suture clinic in the spring to focus on more advanced skills, including suture patterns. Student participants in Level 2 will be required to demonstrate correct instrument holding, a simple continuous suture pattern, and the ability to tie a square knot.

Pre-Veterinary Club Day, College of Veterinary Medicine and Biomedical Sciences, CSU

October 2015: Provided lecture and laboratory activities for the Artificial Insemination session

January 2017: Invited talk "So you want to be a veterinarian?" at PreVet Club Monthly meeting

October 2017: Key Note Address to Pre-Vet Club Annual Symposia

October 2019: Small Animal Reproduction: Spay and Neuter Laboratory session

Predator vs. Prey – How can you tell? Sheila Henke, 3rd grade class, Bennett Elementary School, Fort Collins, CO

In-class outreach program with 22 students using canine, equine, feline, and bovine skulls and a plastinated sagittal fetal calf head, as well as demonstration of the VAA-VR program.

Biomedical Sciences Student Association, College of Veterinary Medicine and Biomedical Sciences, CSU

February 2016: Invited talk "So you want to go to professional school?" at BSA monthly meeting

April 2016: Suture Clinic for 50 BSA members with the help of 5 other faculty and MD/DVMs

STEM Anatomy Lecture for CSU Senior Scholarship Day – recruitment Fall 2015

Appendix 1 - Materials for External Peer Review of Teaching has been prepared as instructed by the Western Consortium Regional Teaching Academy's guidelines for external peer review. This document is accessible from a Google Drive using this [link](#).