

UNIVERSITY OF PENNSYLVANIA - SCHOOL OF VETERINARY MEDICINE

DATE: April 2022

CURRICULUM VITAE

Amy L. Johnson, DVM

*Associate Professor (CE) of Large Animal Medicine and Neurology
Department of Clinical Studies – New Bolton Center*

OFFICE ADDRESS:

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EDUCATION:

1995-1999: BA, *Summa Cum Laude, with Distinction in Biology*, University of Pennsylvania
1999-2003: DVM, *with Distinction*, Cornell University College of Veterinary Medicine

POSTDOCTORAL TRAINING and FELLOWSHIP APPOINTMENTS:

2003-2004: Internship in Equine Medicine and Surgery
B.W. Furlong & Associates, Equine Veterinary Hospital, Oldwick, NJ
2004-2007: Residency in Large Animal Internal Medicine
Cornell University College of Veterinary Medicine, Ithaca, NY
2007-2011: Residency in Neurology
University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA

NON-FACULTY ACADEMIC APPOINTMENTS:

2007-2011: Lecturer in Large Animal Medicine
University of Pennsylvania, New Bolton Center, Kennett Square, PA

FACULTY APPOINTMENTS:

2011-2019: Assistant Professor (CE) of Large Animal Medicine and Neurology
University of Pennsylvania, New Bolton Center, Kennett Square, PA
2019-present: Associate Professor (CE) of Large Animal Medicine and Neurology
University of Pennsylvania, New Bolton Center, Kennett Square, PA
2022-present: Marilyn M. Simpson Associate Professor of Equine Medicine
University of Pennsylvania, New Bolton Center, Kennett Square, PA

HOSPITAL AND ADMINISTRATIVE APPOINTMENTS:

2019-present: Section Chief, Internal Medicine and Ophthalmology

RESEARCH and/or CLINICAL INTERESTS:

My clinical interests span all aspects of large animal neurology. My research focuses primarily on improving antemortem diagnosis of neurological diseases in horses, specifically botulism, equine

protozoal myeloencephalitis, and equine Lyme neuroborreliosis. I am also interested in non-infectious equine neurological diseases such as cervical vertebral stenotic myelopathy and equine degenerative myeloencephalopathy.

SPECIALTY CERTIFICATION:

2007: Diplomate, American College of Veterinary Internal Medicine – Large Animal Internal Medicine

2011: Diplomate, American College of Veterinary Internal Medicine - Neurology

LICENSURE:

New Jersey state license (2003-present)

AWARDS, HONORS and MEMBERSHIP in HONORARY SOCIETIES:

Cornell University College of Veterinary Medicine

- Michele and Agnese Cestone Foundation Scholarship 1999-2003
- Phi Zeta 2002
- Pfizer Animal Health Veterinary Scholarship Award 2002
- Merck Manual Award 2003
- Horace K. White Prize 2003
- Daphne Award 2003
- A. Gordon Danks Large Animal Surgery Award 2003
- Charles Gross Bondy Prize 2003
- Resident Research Seminar Award for Presentation Excellence 2006

Interagency Botulism Research Coordinating Committee Conference

- “Gift of Gab” Award 2008

University of Pennsylvania School of Veterinary Medicine

- SCAVMA Class of 2011 Award for Excellence in Teaching, New Bolton Center, April 2011
- House Officer Mentoring Award, New Bolton Center, 2017

PROFESSIONAL ASSOCIATIONS:

- American Veterinary Medical Association (2003-present)
- American Association of Equine Practitioners (2003-present)
- American College of Veterinary Internal Medicine (2007-present)
- Equine Protozoal Myeloencephalitis Society (2010-present)
- Pennsylvania Veterinary Medical Association (2013-present)

NATIONAL COMMITTEES AND ACTIVITIES:

- **American Association of Equine Practitioners (AAEP)**
 - Subject Matter Resource Team - neurology, January 2013-present
 - Educational Programs Committee
 - Reviewer for internal medicine, January 2013-December 2015
 - Section facilitator January 2016 - December 2017
 - Session moderator, AAEP Annual Convention, December 2014
 - Section facilitator and moderator for “In-Depth” Interactive Neurology session at AAEP Annual Convention, December 2015
 - Vaccination Guidelines Review Group, 2015

- Manuscript Mentoring Program, January 2018-present
 - Assist first-time authors and private practitioners with manuscript preparation
 - Strategic planning meeting participant, February 2019 (2-day meeting)
 - Kester News Hour group member and presenter, AAEP Annual Convention, 2019-present
 - Infectious Disease Committee, December 2019 – December 2022
 - Disease Guidelines Subcommittee, December 2019-December 2022
 - Composed Equine Protozoal Myeloencephalitis guidelines, 2020
 - Guidelines for Therapeutic Use of Antimicrobials in Horses Task Force, 2021
 - Outrider mentoring program, January 2020 – present
 - Scientific Review and Editorial Committee, March 2020 – December 2022
- **American College of Veterinary Internal Medicine (ACVIM)**
 - Examination Rating Committee, LAIM – 2014-2016
 - Consensus Statement panelist
 - Equine Protozoal Myeloencephalitis, 2014-2015
 - Equine Lyme Disease, 2016-2017
 - LAIM Residency Training and Credentials Committee, 2018-2022
 - Co-chair, 2019-2020
 - Chair, 2020-2021
 - Past chair, 2021-2022
 - **Equine Protozoal Myeloencephalitis Society (EPMS)**
 - Research Meeting Organizing Committee, March 2014-October 2014, 2016-2017, 2019-present
 - Vice president 2018-2022
 - Moderator for EPM SIG (Special Interest Group) meeting at ACVIM 2019, 2021
 - Havemeyer Meeting Committee chair, 2019-2022
 - Responsible for proposal, budget, and planning

EDITORIAL POSITIONS:

Guest editor for *Veterinary Clinics of North America: Equine Practice*, Clinical Neurology issue. Volume 27, Number 3, December 2011.

Section editor (Equine Neurology) for *Comparative Veterinary Anatomy: A Clinical Approach*. Eds. Orsini JA, Grenager NS, de Lahunta A. Elsevier. 2022. Chapter 10 Axial Skeleton: Head, Neck, and Vertebral Column (Chapter editor with Mathew Gerard).

Co- guest editor (with Charles H. Vite) for special issue in *Animals: Neurodegenerative Diseases in Animals – Mechanisms, Onset and Therapeutic Options*. Anticipated publication date November 2022.

AD HOC/INVITED REVIEWS:

- Journal of the American Veterinary Medical Association
Book review, *Equine Neurology*, *J Am Vet Med Assoc* 2008;233:918-920.
- Small Ruminant Research (2008)
- Equine Veterinary Education (2008-2014, 2016-2019)
- Journal of Equine Veterinary Science (2008-2010, 2015, 2021-2022)
- Journal of Veterinary Emergency and Critical Care (2010, 2019)
- Equine Veterinary Journal (2010-2016, 2018-2021)
- Journal of Veterinary Internal Medicine (2011-2021)
- Journal of Veterinary Diagnostic Investigation (2011)

- Australian Veterinary Journal (2011)
- The Veterinary Journal (2013, 2022)
- Canadian Veterinary Journal (2013-2014)
- Anaerobe (2013)
- BMC Veterinary Research (2013)
- Wiley-Blackwell book proposals (2014)
- Veterinary Ophthalmology (2016)
- Vaccine (2017)
- Research in Veterinary Science (2018-2019)
- Journal of Parasitology (2018)
- Veterinary Parasitology (2020-2021)

CLINICAL SERVICE at PennVet:

Title of service	Years	Number of Months on Clinics per year	Number of Weeks per Month on Clinics	Number of Days on clinics per Week	Hours per week of direct student teaching contact while on clinics
Large Animal Medicine	2007-8	5	4	5	15-20
	2008-9	5.5	4	5	15-20
	2009-10	6	4	5	15-20
	2010-11	6.5	4	5	15-20
	2011-12	8	4	5	15-20
	2012-13	5.5	4	5	15-20
	2013-14	8	4	5	15-20
	2014-15	5.5	4	5	15-20
	2015-16	7.5	4	5	15-20
	2016-17	7.5	4	5	15-20
	2017-18	5.5	4	5	15-20
	2018-19	7	4	5	15-20
	2019-20	6.5	4	5	15-20
Large Animal Emergency/ Critical Care	2020-21	12	4	3	10-15
	2021-22	12	4	3	10-15
	2007-8	3.5	4	5	15-20
	2008-9	3	4	5	15-20
	2009-10	2.5	4	5	15-20
	2010-11	2	4	5	15-20
	2018-19	0.5	4	5	15-20
	2019-20	0.5	4	5	15-20

PUBLICATIONS:

(* denotes senior author)

Peer-Reviewed Research Papers:

1. **Johnson AL**, Braidotti P, Pietra GG, Russo SJ, Kabore A, Wang W-J, Beers MF. Post-translational processing of surfactant protein-C proprotein: targeting motifs in the NH₂-terminal flanking domain are cleaved in late compartments. *Am J Respir Cell Mol Biol* 2001;24:253-263.

2. **Johnson AL**, Lamm CG, Divers TJ. Acquired cervical scoliosis attributed to *Parelaphostrongylus tenuis* infection in an alpaca. *J Am Vet Med Assoc* 2006;229:562-565.
3. **Johnson AL**, Divers TJ, Freckleton ML, McKenzie HC, Mitchell E, Cullen JM, McDonough SP. Fall panicum (*Panicum dichotomiflorum*) hepatotoxicosis in horses and sheep. *J Vet Intern Med* 2006;20:1414-21.
4. Cihocki LM, Divers TJ, **Johnson AL**, Warren AL, Schramme M, Rassnick KM, Scott DW. A case of multiple epitrichial sweat gland ductal carcinomas in a horse. *Vet Dermatol* 2007;18:134-137.
5. **Johnson AL**, Jesty SA, Gelzer AR, Divers TJ, Kraus MS. ECG of the Month. Ventricular tachycardia in a horse. *J Am Vet Med Assoc* 2007;231:706-708.
6. Starkey SR, **Johnson AL**, Ziegler PE, Mohammed HO. An outbreak of cryptosporidiosis among alpaca crias and their human caregivers. *J Am Vet Med Assoc* 2007;231:1562-1567.
7. **Johnson AL**, Divers TJ, Chang Y-F. Validation of an in-clinic enzyme-linked immunosorbent assay kit for diagnosis of *Borrelia burgdorferi* infection in horses. *J Vet Diagn Invest* 2008;20:321-324.
8. Stokol T, Gold J, **Johnson A**, Ainsworth D. What is your diagnosis? Pleural fluid from a neonatal Thoroughbred filly with pneumonia. *Vet Clin Pathol* 2008;37:237-241.
9. **Johnson AL**, Stewart JE, Perkins GA. Diagnosis and treatment of *Eimeria macusaniensis* in an adult alpaca with signs of colic. *Vet J* 2009;179:465-467.
10. **Johnson AL**, McAdams SC, Whitlock RH. Type A botulism in horses in the United States: a review of the past ten years (1998-2008). *J Vet Diagn Invest* 2010;22:165-173.
11. **Johnson AL**, Burton AJ, Sweeney RW. Utility of two immunological tests for antemortem diagnosis of equine protozoal myeloencephalitis (*Sarcocystis neurona* infection) in naturally occurring cases. *J Vet Intern Med* 2010;24:1184-1189.
12. Grenager NS, Divers TJ, Mohammed HO, **Johnson AL**, Albright J, Reuss SM. Epidemiologic features and association with crib-biting in horses with neurological disease associated with temporohyoid osteoarthropathy (1991-2008). *Equine Vet Educ* 2010;22:467-472.
13. Underwood C, Southwood LL, Walton RM, **Johnson AL**. Hepatic and metabolic changes in surgical colic patients: a pilot study. *J Vet Emerg Crit Care* 2010;20:578-586.
14. Watts AE, **Johnson AL**, Felipe MJ, Divers TJ. Recurrent *Actinobacillus* peritonitis in an otherwise healthy Thoroughbred horse. *Aust Vet J* 2011;89:143-146.
15. Jesty SA, Kraus MS, **Johnson AL**, Gelzer AR, Bartol J. An accessory bypass tract masked by the presence of atrial fibrillation in a horse. *J Vet Cardiol* 2011;13:79-83.
16. Tyner GA, Nolen-Walston RD, Hall T, Palmero JP, Couetil L, Javscas L, Stack A, Schott H, **Johnson A**, Hardefeldt L, Gruntman A, Sommardahl C, Menzies-Gow N, dePedro P, Norman T, Fennell LC, Axon JE, Lindborg S, Aceto H, Boston R, Engiles J. A multicenter retrospective study of 151 renal biopsies in horses. *J Vet Intern Med* 2011;25:532-539.
17. Benson ER, Alphin RL, Rankin MK, Caputo MP, Kinney CA, **Johnson AL***. Evaluation of EEG based determination of unconsciousness vs. loss of posture in broilers. *Res Vet Sci* 2012;93:960-964.

18. **Johnson AL**, Sweeney RW, McAdams SC, Whitlock RH. Quantitative real-time PCR for detection of the neurotoxin gene of *Clostridium botulinum* type B in equine and bovine samples. *Vet J* 2012;194:118-120.
19. Gilsenan WF, Habecker PL, Coyne TM, **Johnson AL***. Neurologic disease attributed to pituitary adenoma in an alpaca. *J Vet Intern Med* 2012;26:1073-1077.
20. **Johnson AL**, Alenghat T, Engiles JB. Cervical myelomalacia in a lamb (*Ovis aries*) and an alpaca (*Vicugna pacos*) after attempted intramuscular injection. *J Vet Intern Med* 2012;26:1481-1484.
21. Caputo MP, Benson ER, Pritchett EM, Hougentogler DP, Jain P, Patil C, **Johnson AL**, Alphin RL. Comparison of water-based foam and carbon dioxide gas mass emergency depopulation of White Pekin ducks. *Poult Sci* 2012;91:3057-3064.
22. Benson ER, Alphin RL, Rankin MK, Caputo MP, **Johnson AL***. Electroencephalogram-based methodology for determining unconsciousness during depopulation. *Avian Dis* 2012;56(4 Suppl):884-890.
23. Benson ER, Alphin RL, Rankin MK, Caputo MP, Hougentogler DP, **Johnson AL**. Mass emergency water-based foam depopulation of poultry. *Avian Dis* 2012;56(4 Suppl):891-896.
24. Dunkel B, Corley KTT, **Johnson AL**, Witte TH, Leitch M, Marr CM, Weller R. Pneumocephalus in five horses. *Equine Vet J* 2013;45:367-71.
25. Caputo MP, Alphin RL, Pritchett E, Hougentogler DP, **Johnson AL**, Benson ER, Patil C. Evaluation of the diving reflex in response to nonterminal submersion of White Pekin ducks in water-based foam. *Poult Sci* 2013;92:412-417.
26. **Johnson AL**, Morrow JK, Sweeney RW. Indirect fluorescent antibody test and surface antigen ELISAs for antemortem diagnosis of equine protozoal myeloencephalitis. *J Vet Intern Med* 2013;27:596-599.
27. Reed SM, Howe DK, Morrow JK, Graves A, Yeargan MR, **Johnson AL**, MacKay RJ, Furr M, Saville WJ, Williams NM. Accurate antemortem diagnosis of equine protozoal myeloencephalitis (EPM) based on detecting intrathecal antibodies against *Sarcocystis neurona* using the SnSAG2 and SnSAG4/3 ELISAs. *J Vet Intern Med* 2013;27:1193-200.
28. Rankin MK, Alphin RL, Benson ER, **Johnson AL**, Hougentogler DP, Mohankumar P. Comparison of water-based foam and carbon dioxide gas emergency depopulation methods of turkeys. *Poult Sci* 2013;92:3144-8.
29. **Johnson AL**, McAdams-Gallagher SC, Sweeney RW. Quantitative real-time PCR for detection of neurotoxin genes of *Clostridium botulinum* types A, B, and C in equine samples. *Vet J* 2014;199:157-161.
30. Tomlinson JE, **Johnson AL***, Ross MW, Engiles JB, Levine DG, Wisner WA, Sweeney RW. Successful detection and removal of a functional parathyroid adenoma in a pony using technetium Tc 99m sestamibi scanning. *J Vet Intern Med* 2014;28:687-92.
31. Gilsenan WF, Getman LM, Parente EJ, **Johnson AL***. Headshaking in 5 horses after paranasal sinus surgery. *Vet Surg* 2014;43:678-84.
32. Setlakwe EL, Sweeney R, Engiles JB, **Johnson AL***. Identification of *Bartonella henselae* in the liver of a Thoroughbred foal with severe suppurative cholangiohepatitis. *J Vet Intern Med* 2014;28:1341-5.

33. Pritchett EM, Rogers AG, Caputo MP, Benson ER, Alphin RL, **Johnson AL**. Application of the wireless electroencephalogram to measure stress in White Pekin ducks. *Res Vet Sci* 2014;97:162-8.
34. **Johnson AL**, McAdams-Gallagher SC, Aceto H. Outcome of adult horses with botulism treated at a veterinary hospital: 92 cases (1989-2013). *J Vet Intern Med* 2015 Jan;29(1):311-9. doi: 10.1111/jvim.12502. Epub 2014 Nov 19.
35. Mullen KR, Furness MC, **Johnson AL**, Norman TE, Hart KA, Burton AJ, Bicalho RC, Ainsworth DM, Thompson MS, Scrivani PV. Adverse reactions in horses that underwent general anesthesia and cervical myelography. *J Vet Intern Med* 2015 May-Jun;29(3):954-60. doi: 10.1111/jvim.12590. Epub 2015 Apr 9.
36. Tomlinson JE, Byrne E, Pusterla N, Magdesian KG, Hilton HG, McGorum B, Davis E, Schoster A, Arroyo L, Dunkel B, Carslake H, Boston RC, **Johnson AL***. The use of recombinant tissue plasminogen activator (rTPA) in the treatment of fibrinous pleuropneumonia in horses: 25 cases (2007-2012). *J Vet Intern Med* 2015 Sep-Oct;29(5):1403-9. doi: 10.1111/jvim.13594. Epub 2015 Aug 7.
37. Tomlinson JE, Reef VB, Boston RC, **Johnson AL***. The association of fibrinous pleural effusion with survival and complications in horses with pleuropneumonia (2002-2012): 74 cases. *J Vet Intern Med* 2015 Sep-Oct;29(5):1410-7. doi: 10.1111/jvim.13591. Epub 2015 Aug 11.
38. Sato Y, Wigle WL, Gallagher S, **Johnson AL**, Sweeney RW, Wakenell PS. Outbreak of type C botulism in commercial layer chickens. *Avian Dis* 2016 Mar;60(1):90-4. doi: 10.1637/11293-100415-Case.1.
39. **Johnson AL**, McAdams-Gallagher SC, Aceto H. Accuracy of a mouse bioassay for the diagnosis of botulism in horses. *J Vet Intern Med* 2016 Jul;30(4):1293-9. doi: 10.1111/jvim.13950. Epub 2016 Apr 25.
40. Johnstone LK, Engiles JB, Aceto H, Buechner-Maxwell V, Divers T, Gardner R, Levine R, Scherrer N, Tewari D, Tomlinson J, **Johnson AL***. Retrospective evaluation of horses diagnosed with neuroborreliosis on postmortem examination: 16 cases (2004-2015). *J Vet Intern Med* 2016 Jul;30(4):1305-12. doi: 10.1111/jvim.14369. Epub 2016 Jun 21.
41. Mittelman NS, Engiles JB, Murphy L, Vudathala D, **Johnson AL***. Presumptive iatrogenic microcystin-associated liver failure and encephalopathy in a Holsteiner gelding. *J Vet Intern Med* 2016 Sep;30(5):1747-1751. doi: 10.1111/jvim.14571. Epub 2016 Sep 9.
42. Luethy D, Slack J, Kraus MS, Gelzer AR, Habecker P, **Johnson AL***. Third-degree atrioventricular block and collapse associated with eosinophilic myocarditis in a horse. *J Vet Intern Med* 2017 May;31(3):884-889. doi: 10.1111/jvim.14682. Epub 2017 Mar 14.
43. Mittelman NS, Divers TJ, Engiles JB, Gerhold R, Ness S, Scrivani PV, Southard T, **Johnson AL***. *Parelaphostrongylus tenuis* cerebrospinal nematodiasis in a horse with cervical scoliosis and meningomyelitis. *J Vet Intern Med* 2017 May;31(3):890-893. doi: 10.1111/jvim.14691. Epub 2017 Mar 20.
44. Setlakwe E, **Johnson AL***. Acute encephalopathy in a 2-year-old pot-bellied pig following accidental intoxication with clonazepam. *J Vet Emerg Crit Care (San Antonio)* 2017 May;27(3):369-372. doi: 10.1111/vec.12602. Epub 2017 Apr 20.
45. Intan-Shameha AR, Divers TJ, Morrow JK, Graves A, Olsen E, **Johnson AL**, Mohammed HO. Phosphorylated neurofilament H (pNF-H) as a potential diagnostic marker for neurological disorders in horses. *Res Vet Sci* 2017 Oct;114:401-405. doi: 10.1016/j.rvsc.2017.07.020. Epub 2017 Jul 18.

46. Parkinson NJ, McKenzie HC, Barton MH, Davis JL, Dunkel B, **Johnson AL**, MacDonald ES. Catheter-associated venous air embolism in hospitalized horses: 32 cases. *J Vet Intern Med* 2018 Mar;32(2):805-814. doi: 10.1111/jvim.15057. Epub 2018 Feb 20.
47. **Johnson AL**, Johnstone LK, Stefanovski D. Cerebrospinal fluid Lyme multiplex assay results are not diagnostic in horses with neuroborreliosis. *J Vet Intern Med* 2018 Mar;32(2):832-838. doi: 10.1111/jvim.15067. Epub 2018 Feb 20.
48. Schale S, Howe D, Yeargan M, Morrow JK, Graves A, **Johnson AL***. Protozoal coinfection in horses with equine protozoal myeloencephalitis in the eastern United States. *J Vet Intern Med* 2018 May;32(3):1210-1214. doi: 10.1111/jvim.15127. Epub 2018 Apr 10.
49. Burke MJ, Tomlinson JE, Blikslager AT, **Johnson AL**, Dallap-Schaer BL. Evaluation of digital cryotherapy using a commercially available sleeve style ice boot in healthy horses and horses receiving i.v. endotoxin. *Equine Vet J* 2018 Nov;50(6):848-853. doi: 10.1111/evj.12842. Epub 2018 May 7.
- One of 27 papers included in EVJ's special open-access online collection "Understanding and managing equine endocrinopathic laminitis"
50. Mittelman NS, Stefanovski D, **Johnson AL***. Utility of C-reactive protein and serum amyloid A in the diagnosis of equine protozoal myeloencephalitis. *J Vet Intern Med* 2018 Sep;32(5):1726-1730. doi: 10.1111/jvim.15254. Epub 2018 Sep 14.
51. Proctor-Brown L, Hicks R, Colmer S, Guilfoyle D, Dallap-Schaer B, **Johnson AL**, Tomlinson J. Distal limb pathologic conditions in horses treated with sleeve-style digital cryotherapy (285 cases). *Res Vet Sci* 2018 Dec;121:12-17. doi: 10.1016/j.rvsc.2018.09.008. Epub 2018 Oct 2
52. Luethy D, Frimberger AE, Bedenice D, Byrne BS, Groover ES, Gardner RB, Lewis T, MacDonald VS, Proctor-Brown L, Tomlinson JE, Rassnick KM, **Johnson AL***. Retrospective evaluation of clinical outcome after chemotherapy for lymphoma in 15 equids (1991-2017). *J Vet Intern Med* 2019 Mar;33(2):953-960. doi: 10.1111/jvim.15411. Epub 2019 Jan 12.
53. Gorenberg EB, **Johnson AL**, Magdesian KG, Bertin FR, Costa LRR, Theelen MJP, Durward-Akhurst SA, Cruz Villagran C, Carslake H, Frank N, Tomlinson JE. Diagnosis and treatment of confirmed and suspected primary hyperparathyroidism in equids: 17 cases (1999-2016). *Equine Vet J* 2020 Jan;52(1):83-90. doi: 10.1111/evj.13120. Epub 2019 May 10.
54. Boorman S, **Johnson AL**, Schaer TP, Fecteau ME. Clinical findings, treatments and outcomes in farm animals with vertebral fractures or luxations: 22 cases (2006-2017). *Vet Comp Orthop Traumatol* 2019 Nov;32(6):492-498. doi: 10.1055/s-0039-1692637. Epub 2019 Jun 26.
55. Luethy D, **Johnson AL**, Stefanovski D, Boston RC, Orsini JA. Glucose and insulin response after intravenous and subcutaneous somatostatin administration in healthy horses. *J Vet Pharmacol Ther* 2019 Sep;42(5):541-547. doi: 10.1111/jvp.12793. Epub 2019 Jul 20.
56. Boorman S, Scherrer N, Stefanovski D, **Johnson AL***. Facial nerve paralysis in 64 equids: Clinical variables, diagnosis and outcome. *J Vet Intern Med*. 2020 May;34(3):1308-1320. doi: 10.1111/jvim.15767. Epub 2020 Apr 6.
57. Scherrer NM, Knickelbein KE, Engiles JB, Johnstone LK, Tewari D, **Johnson AL***. Ocular disease in horses with confirmed ocular or central nervous system *Borrelia* infection: Case series and review of literature. *Vet Ophthalmol*. 2020 Nov;23(6):1014-1024. doi: 10.1111/vop.12817. Epub 2020 Aug 30.

58. Brown KA, Davidson EJ, **Johnson AL**, Wulster KB, Orved K. Inflammatory cytokines in horses with cervical articular process joint osteoarthritis on standing cone beam computed tomography. *Equine Vet J*. 2020 Sep;53(5):944-954. doi: 10.1111/evj.13392. Epub 2020 Dec 8.
59. Edwards LA, Donnelly CG, Reed SM, Valberg S, Chigerwe M, **Johnson AL**, Finno CJ. Serum and cerebrospinal fluid phosphorylated neurofilament heavy protein concentrations in equine neurodegenerative diseases. *Equine Vet J*, 2021 May 9. doi: 10.1111/evj.13452. Online ahead of print.
60. Guarino C, Pinn-Woodcock T, Levine D, Miller J, **Johnson AL***. Case report: Nuchal bursitis associated with *Borrelia burgdorferi* infection in a horse. *Front Vet Sci*. 2021 Sep 23;8:743067. doi: 10.3389/fvets.2021.743067. eCollection 2021.
61. Hay AN, Wagner B, Leeth CM, LeRoith T, Cecere TE, Lahmers KK, Andrews FM, Were SR, **Johnson AL**, Clark CK, Pusterla N, Reed SM, Lindsay DS, Taylor S, Estell KE, Furr M, MacKay RJ, Del Piero F, Witonsky SG. Horses affected by EPM have increased sCD14 compared to healthy horses. *Vet Immunol Immunopathol*. 2021 Dec;242:110338. doi: 10.1016/j.vetimm.2021.110338. Epub 2021 Oct 22.
62. Colmer SF, Wulster K, **Johnson AL**, Levine DG, Underwood C, Watkins TW, van Eps AW. Treatment of primary hyperparathyroidism in a Miniature Horse using chemical ablation of abnormal parathyroid tissue localized by 3-phase computed tomography. *J Vet Intern Med*. 2022 Mar;36(2):798-804. doi: 10.1111/jvim.16390. Epub 2022 Feb 12.
63. Colmer SF, Manzi T, Wulster Bills K, Bender SJ, **Johnson AL***. What is your diagnosis? *J Am Vet Med Assoc*. 2022 Feb 28;259(S1):1-3. doi: 10.2460/javma.21.12.0510.
- Peripheral Nerve Sheath Tumor in a Thoroughbred Filly

Review Articles (Peer reviewed):

1. **Johnson AL**. Evidence-based clinical question: Which is the most sensitive and specific commercial test to diagnose *Sarcocystis neurona* infection (equine protozoal myeloencephalitis) in horses? *Equine Vet Educ* 2008;20:166-168.
2. Reed SM, Furr M, Howe DK, **Johnson AL**, MacKay RJ, Morrow JK, Pusterla N, Witonsky S. Equine protozoal myeloencephalitis: an updated consensus statement with a focus on parasite biology, diagnosis, treatment, and prevention. *J Vet Intern Med* 2016 Mar;30(2):491-502. doi: 10.1111/jvim.13834. Epub 2016 Feb 9.
3. Divers TJ, Gardner RB, Madigan JE, Witonsky SG, Bertone JJ, Swinebroad EL, Schutzer SE, **Johnson AL**. *Borrelia burgdorferi* infection and Lyme disease in North American horses: a consensus statement. *J Vet Intern Med* 2018 Mar;32(2):617-632. doi: 10.1111/jvim.15042. Epub 2018 Feb 22.

Books:

n/a

Book Chapters and Reviews:

1. **Johnson AL**, Whitlock RH. Botulism. In: Naylor JM, Abutarbush SM. *The Art of Equine Medicine: An Audiovisual Text*. Saskatoon, Vet Visions Inc., 2009. ISBN 978-0-9687212-6-1.
2. **Johnson AL**. Tetanus. In: TS Mair, EE Hutchinson. *Infectious Diseases of the Horse*. Fordham, Ely, EVJ Ltd., September 2009.

3. **Johnson AL.** Update on infectious diseases affecting the equine nervous system. *Vet Clin Equine* 2011;27:573-587.
4. **Johnson AL.** Nervous system: diagnostic and therapeutic procedures. In: Orsini JA, Divers TJ. *Equine Emergencies: Treatment and Procedures*, 4th ed. Elsevier, Dec 2013.
5. **Johnson AL,** Divers TJ (with contributions from de Lahunta A). Nervous system: neurologic emergencies. In: Orsini JA, Divers TJ. *Equine Emergencies: Treatment and Procedures*, 4th ed. Elsevier, Dec 2013.
6. Gilsenan WF and **Johnson AL***. Large animal neurologic diseases. In: Lien L, Loly S, Ferguson S. *Large Animal Medicine for Veterinary Technicians*, 1st ed. Wiley-Blackwell, June 2014.
7. **Johnson AL.** Neurologic consequences of Lyme disease. In: Sprayberry KA, Robinson NE. *Robinson's Current Therapy in Equine Medicine*, 7th ed. Elsevier, 2015.
8. **Johnson AL.** Brainstem. In: Sprayberry KA, Robinson NE. *Robinson's Current Therapy in Equine Medicine*, 7th ed. Elsevier, 2015.
9. **Johnson AL.** Differential diagnosis of muscle tremor and paresis. In: Furr M, Reed S. *Equine Neurology*. 2nd ed. Wiley-Blackwell, 2015.
10. **Johnson AL,** Reed SM. Cervical vertebral stenotic myelopathy. In: Furr M, Reed S. *Equine Neurology*, 2nd ed. Wiley-Blackwell, 2015.
11. Wotman KL, **Johnson AL.** Ocular manifestations of systemic disease in the horse. *Vet Clin North Am Equine Pract* 2017 Dec;33(3):563-582. doi: 10.1016/j.cveq.2017.08.002. Review.
12. **Johnson AL,** Wagner B. *Borrelia burgdorferi*. In: Pusterla N, Higgins J. *Interpretation of Equine Laboratory Diagnostics*. Wiley-Blackwell, 2018.
13. **Johnson AL.** *Sarcocystis neurona* and *Neospora hughesi*. In: Pusterla N, Higgins J. *Interpretation of Equine Laboratory Diagnostics*. Wiley-Blackwell, 2018.
14. Bedenice D, **Johnson AL.** Neurologic conditions affecting the equine athlete. *Vet Clin North Am Equine Pract* 2018 Aug;34(2):277-297. doi: 10.1016/j.cveq.2018.04.006.
15. **Johnson AL.** Lyme disease. In: Lavoie, Jean-Pierre. *Blackwell's Five-Minute Veterinary Consult: Equine, Third Edition*. Wiley-Blackwell, 2020.

Editorials and commentaries:

1. **Johnson AL.** Congenital brain malformations – uncommon but important causes of neurologic signs in neonates. *Equine Vet Educ* 2010;22:599-601.
2. **Johnson AL.** Equine cerebellar abiotrophy: searching the genome for an explanation. *Equine Vet Educ* 2011;23:135-137.
3. **Johnson AL,** Gilsenan WF, Palmer JE. Metabolic encephalopathies in foals – pay attention to the serum biochemistry panel! *Equine Vet Educ* 2012;24:233-235.
4. **Johnson AL.** Botulism: knowledge and preparation improve outcome for horses. *Equine Vet Educ* 2018;30:598-599. 01 March 2017 doi: 10.1111/eve.12740

5. **Johnson AL**. Neurogenic blindness in the horse: Possible causes and tips for evaluation. *Equine Vet Educ* 2021;33(2):71-74. 26 Sept 2019 doi.org/10.1111/eve.13184

CD Reference Sections, Videos:

n/a

Submitted Research Papers:

1. Connard S, Hodge E, Demchur J, Wulster K, **Johnson AL**, Ross M, Levine D. Successful detection and removal of a functional parathyroid adenoma using a radioguided parathyroidectomy technique with a hand-held gamma detector and low-dose technetium Tc 99m sestamibi scintigraphy in a horse. Submitted to *Equine Veterinary Education*, February 2022. Manuscript ID is EVE-CR-2022-027.

Submitted Book Chapters and Reviews:

1. **Johnson AL**. Nervous System. In: Murphy L. *Large Animal Toxicology*. Submitted, July 2014.

2. **Johnson AL**. Review of neurosurgical disease amenable to neurosurgical procedures. In: Nout-Lomas Y and Easley J. *Equine Neurosurgery*. Submitted, June 2019.

3. **Johnson AL**. Equine – Central Nervous System. Case: Cervical Vertebral Osteoarthritis. In: Orsini JA, Grenager N, Orsini P. *Comparative Veterinary Anatomy: Clinical Applications*. Submitted, November 2019.

4. Finno CJ and **Johnson AL**. Equine neuroaxonal dystrophy and degenerative myeloencephalopathy. Submitted to *Vet Clin North Am Equine Pract* in Aug 2021.

5. Bedenice D and **Johnson AL**. Neurologic conditions in the sport horse. *Submitted to Animal Frontiers* in December 2021. Manuscript ID is AF-2021-061.

6. Colmer SF, Abraham M, **Johnson AL***. Botulism in foals. In: Wong D, Wilkins P, and Canisso I. *Equine Neonatal and Perinatal Medicine and Surgery*. Wiley Publishing. Submitted, March 2022.

Published Abstracts (* denotes presenting author):

1. **Johnson AL***, Braidotti P, Pietra GG, Russo SJ, Kabore A, Wang W-J, Beers MF. Proteolytic processing of rat SP-C propeptide involves a final N-terminal cleavage step. American Lung Association and American Thoracic Society International Conference, April 1999. Poster presentation.

2. Perkins GA*, **Johnson AL**, Boatwright C. How to rapidly administer intravenous fluids to critically ill equine patients on the farm. *AAEP Proceedings* 2005;51:256-259. American Association of Equine Practitioners 51st Annual Convention, December 2005. Oral presentation.

3. **Johnson AL***, Divers TJ, Freckleton ML, McKenzie HC, Mitchell E, Cullen JM, McDonough SP. Fall panicum (*Panicum dichotomiflorum*) hepatotoxicosis in horses and sheep. *J Vet Intern Med* 2006;20:697-802. American College of Veterinary Internal Medicine Forum, May 2006. Poster presentation.

4. **Johnson AL***, Divers TJ, Chang Y-F. Validation of an in-house ELISA test for diagnosis of *Borrelia burgdorferi* infection in horses. *AAEP Proceedings* 2006;52:222. American Association of Equine Practitioners 52nd Annual Convention, December 2006. Oral presentation.

5. **Johnson AL***, McAdams S, Sweeney RW, Whitlock RH. Type A botulism in horses in the USA: a retrospective review of the past 10 years (1998-2008). *IBRCC Proceedings* 2008. Interagency Botulism Research Coordinating Committee Annual Meeting, September 2008. Oral presentation.
6. **Johnson AL***, de Lahunta A, Divers TJ. Acquired scoliosis in horses: case series and proposed pathogenesis. *AAEP Proceedings* 2008;54:192-197. American Association of Equine Practitioners 54th Annual Convention, December 2008. Oral presentation.
7. **Johnson AL***, Burton AJ, Sweeney RW. Utility of two serologic tests for antemortem diagnosis of equine protozoal myeloencephalitis (*Sarcocystis neurona* infection) in naturally occurring cases. *J Vet Intern Med* 2009;23:673-786 (late-breaking research report). American College of Veterinary Internal Medicine Forum, June 2009. Oral presentation.
8. **Johnson AL***, McAdams SC, Sweeney RW, Whitlock RH. Diagnosis of type B botulism in horses: current techniques and future goals. *IBRCC Proceedings* 2009. Interagency Botulism Research Coordinating Committee Annual Meeting, October 2009. Oral presentation.
9. Clarke HE*, **Johnson AL**, Engiles JB. Intracerebral medulloepithelioma in a horse. *Vet Pathol* 2009;46:1045. Combined 60th and 44th Annual Meetings of the American College of Veterinary Pathologists and the American Society for Veterinary Clinical Pathology, December 2009. Poster presentation.
10. Norton JL*, **Johnson AL**. How to diagnose and treat neuromuscular diseases: the weak, trembling horse. *AAEP Proceedings* 2009;55:167-171. American Association of Equine Practitioners 55th Annual Convention, December 2009. Oral presentation.
11. **Johnson AL***. Evidence-based review of diagnosis and treatment of *Sarcocystis neurona* infection (equine protozoal myeloencephalitis). *AAEP Proceedings* 2009;55:172-176. American Association of Equine Practitioners 55th Annual Convention, December 2009. Oral presentation.
12. **Johnson AL***, Sweeney RW, McAdams SC, Whitlock RH. Optimization of quantitative real-time polymerase chain reaction for detection of *Clostridium botulinum* type B in equine samples. *IBRCC Proceedings* 2010. Interagency Botulism Research Coordinating Committee Annual Meeting, November 2010. Poster presentation.
13. **Johnson AL***, McAdams SC, Whitlock RH. Canine botulism: retrospective analysis of 10 years (2000-2010) and an unusual outbreak associated with iguanas. *IBRCC Proceedings* 2010. Interagency Botulism Research Coordinating Committee Annual Meeting, November 2010. Oral presentation.
14. **Johnson AL***. How to perform a complete neurologic examination in the field and identify abnormalities. *AAEP Proceedings* 2010;56:331-337. American Association of Equine Practitioners 56th Annual Convention, December 2010. Oral presentation.
15. Wagner B*, Glaser A, Bartol J, Mahar O, **Johnson A**, Divers T. A new sensitive Lyme multiplex assay to confirm neuroborreliosis in horses: a case report. *AAEP Proceedings* 2011;57:70-75. American Association of Equine Practitioners 57th Annual Convention, December 2011. Oral presentation.
16. **Johnson AL***, Morrow JK, Sweeney RW. Comparison of an indirect fluorescent antibody test and surface antigen ELISAs for antemortem diagnosis of equine protozoal myeloencephalitis in naturally occurring cases. EPM SIG (Special Interest Group), American College of Veterinary Internal Medicine Forum, May 2012. Oral presentation.
17. Coleman MC*, Chaffin MK, Griffin J, Corapi WV, Norman TE, Slovis NM, **Johnson AL**, Magdesian KG, Clark CC. Vertebral osteomyelitis and diskospondylitis in foals: results of a multicenter, retrospective

study of 15 affected foals. *J Vet Intern Med* 2012;26:690-822 (p. 746-747). American College of Veterinary Internal Medicine Forum, May 2012. Poster presentation.

18. Coleman MC*, Chaffin MK, Griffin J, Corapi WV, Norman TE, **Johnson AL**, Magdesian KG. Vertebral osteomyelitis and diskospondylitis in adult horses: results of a multicenter, retrospective study of 19 affected horses. *J Vet Intern Med* 2012;26:690-822 (p. 747). American College of Veterinary Internal Medicine Forum, May 2012. Poster presentation.

19. **Johnson AL***, McAdams-Gallagher SC, Aceto H. Clinical course and outcome of horses with botulism treated at a veterinary hospital: 92 cases (1989-2013). *IBRCC Proceedings* 2013. Interagency Botulism Research Coordinating Committee Annual Meeting, October 2013. Oral presentation.

20. Mullen KR*, Furness C, **Johnson AL**, Norman TE, Hart KA, Burton AJ, Bicaхло RC, Ainsworth DM, Thompson M, Scrivani PV. Acute and delayed adverse reactions in horses that underwent general anesthesia and cervical myelography. *J Vet Intern Med* 2014;28:976-1134 (p. 1106). American College of Veterinary Internal Medicine Forum, June 2014. Oral presentation.

21. Tomlinson JE*, Byrne E, Pusterla N, Magdesian KG, Hilton H, McGorum BC, Davis EG, Schoster A, Arroyo LG, Dunkel B, Carslake H, Boston RC, **Johnson AL**. The use of recombinant tissue plasminogen activator (rTPA) in the treatment of fibrinous pleuropneumonia in the horse: 25 cases (2007-2012). *J Vet Intern Med* 2014;28:976-1134 (p. 1105). American College of Veterinary Internal Medicine Forum, June 2014. Oral presentation.

22. **Johnson AL***, McAdams-Gallagher SC, Aceto H. Outcome of adult horses with botulism treated at a veterinary hospital: 92 cases (1989-2013). University of Pennsylvania School of Veterinary Medicine Faculty Research Day, June 2014. Oral presentation.

23. Tomlinson JE*, **Johnson AL**, Reef VB, Boston RC. The association of fibrinous pleural effusion with survival and complications in horses with pleuropneumonia (2002-2012): 74 cases. The Veterinary Comparative Respiratory Society 32nd Annual Symposium, October 2014. Oral presentation.

24. Tomlinson JE*, Byrne E, Pusterla N, Magdesian KG, Hilton HG, McGorum B, Davis E, Schoster A, Arroyo L, Dunkel B, Carslake H, Boston RC, **Johnson AL**. The use of recombinant tissue plasminogen activator (rTPA) in the treatment of fibrinous pleuropneumonia in horses: 25 cases (2007-2012). The Veterinary Comparative Respiratory Society 32nd Annual Symposium, October 2014. Oral presentation.

25. Johnstone L*, Aceto H, Divers TJ, Tomlinson J, Buechner-Maxwell V, **Johnson AL**. Retrospective evaluation of horses diagnosed with Lyme neuroborreliosis on post mortem examination: 13 cases (2004-2014). 2015 ACVIM Forum Research Abstract Program. *J Vet Intern Med* 2015;29:1122–1256. DOI:10.1111/jvim.12609. American College of Veterinary Internal Medicine Forum, June 2015. Oral presentation.

26. **Johnson AL***, Johnstone LK, Stefanovski D. Serum and CSF Lyme Multiplex results for neurologic horses with and without neuroborreliosis. 2016 ACVIM Forum Research Report Program. *J Vet Intern Med* 2016;30:1520–1551. DOI:10.1111/jvim.13963. American College of Veterinary Internal Medicine Forum, June 2016. Oral presentation (research report).

27. Scherrer NM, Knickelbein K*, Engiles JB, Johnstone LK, **Johnson AL**. Uveitis associated with *Borrelia* infection in 5 horses. Abstracts: 47th Annual Meeting of the American College of Veterinary Ophthalmologists, Monterey, CA October 26–29, 2016. *Vet Ophthalmol* 2016;19:E21–E43. DOI:10.1111/vop.12438. American College of Veterinary Ophthalmologists 47th Annual Meeting, October 2016. Oral presentation.

28. Mittelman NS*, **Johnson AL**. Utility of acute phase proteins in equine protozoal myeloencephalitis and other equine nervous system diseases. 2017 ACVIM Forum Research Abstract Program. *J Vet Intern Med* 2017;31:1225-1361. DOI: 10.1111/jvim.14778. American College of Veterinary Internal Medicine Forum, June 2017. Oral presentation.
29. Burke M*, Tomlinson J, Blikslager A, **Johnson AL**, Dallap-Schaer B. Evaluation of digital cryotherapy using a commercially available sleeve style ice boot in healthy horses, and horses receiving intravenous endotoxin. 12th International Equine Colic Research Symposium, Lexington, KY, July 2017. Poster presentation.
30. Intan-Shameha AR, Divers TJ, Morrow JK, Graves A, Olsen E, **Johnson AL***, Mohammed HO. Phosphorylated neurofilament H (pNF-H) as a potential diagnostic marker for neurological disorders in horses. 2nd EPM Society Workshop, October 2017. Oral presentation.
31. Mittelman NS, Stefanovski D, **Johnson AL***. C-reactive protein and serum amyloid A in the diagnosis of equine protozoal myeloencephalitis and other equine nervous system diseases. 2nd EPM Society Workshop, October 2017. Oral presentation.
32. Schale S*, Howe D, Yeargan M, Morrow J, Graves A, **Johnson AL**. Immunological investigation of protozoal co-infection in horses with equine protozoal myeloencephalitis in the eastern United States. 2nd EPM Society Workshop, October 2017. Oral presentation.
33. Hay A, Leeth C, LeRoith T, Lahmers K, Cecere T, Lindsay D, Andrews F, del Piero F, **Johnson AL**, Wagner B, Reed S, Furr M, Pusterla N, MacKay R, Divers T, Weatherford S, Witonsky S*. Identifying the immune phenotype in EPM horses. 2nd EPM Society Workshop, October 2017. Oral presentation.
34. Luethy D, Frimberger AE, Byrne BA, Groover ES, Gardner R, Lewis T, MacDonald V, Proctor-Brown L, Tomlinson J, Rassnick K, **Johnson AL***. Retrospective evaluation of clinical outcome following chemotherapy for lymphoma in 11 horses. 2018 ACVIM Forum Research Abstract Program. American College of Veterinary Internal Medicine Forum, June 2018. Oral presentation.
35. Luethy D, Frimberger AE, Byrne BA, Groover ES, Gardner R, Lewis T, MacDonald V, Proctor-Brown L, Tomlinson J, Rassnick K, **Johnson AL***. Cyclophosphamide dose escalation during equine chemotherapy. 2018 ACVIM Forum Research Abstract Program. American College of Veterinary Internal Medicine Forum, June 2018. Oral presentation.
36. Gorenberg EB*, **Johnson AL**, Magdesian KG, Bertin FR, Costa LRR, Theelen MJP, Durward-Akhurst S, Villagran CC, Carslake H, Frank N, Tomlinson JE. Medical and surgical treatment of primary hyperparathyroidism in 17 equids (1999-2016). 2018 ACVIM Forum Research Abstract Program. American College of Veterinary Internal Medicine Forum, June 2018, Seattle, WA. Oral presentation.
37. Boorman S*, **Johnson AL**, Scherrer N. Associations between clinical parameters and outcome in 62 equids with facial nerve paralysis. 2019 ACVIM Forum Research Abstract Program. American College of Veterinary Internal Medicine Forum, June 2019, Phoenix, AZ. ePoster presentation.
- One of 13 sessions included in "Highlights of ACVIM" session presented at ECEIM by Dr. Allison J. Stewart, November 2019
38. **Johnson AL***, McAdams-Gallagher SC, Aceto H. Accuracy of the mouse bioassay for the diagnosis of botulism in horses. 56th Interagency Botulism Research Coordinating Committee Meeting, October 2019, Ellicott City, MD. Oral presentation.
39. Brown K*, Davidson EJ, Dodson M, **Johnson AL**, Wulster KB, Ortved K. Assessment of intrasynovial inflammatory cytokines in horses with radiographic and standing cone beam computed tomographic

evidence of cervical articular process joint osteoarthritis. Scientific Presentation Abstracts: 2019 ACVS Surgery Summit, October 2019, Las Vegas, NV. Oral presentation.

40. Brown K*, Davidson EJ, **Johnson AL**, Stefanovski D, Wulster K, Orved K. Interobserver agreement of imaging the CAPJs. American College of Veterinary Surgeons 2021 Surgery Summit. Oral presentation.

Submitted Abstracts:

1. Finno CJ*, Edwards LA, Donnelly CG, Reed SM, Valberg SJ, Chigerwe M, **Johnson AL**. How to interpret the phosphorylated neurofilament heavy (pNfH) biomarker test. Submitted to American Association of Equine Practitioners 68th Annual Convention, November 2022, San Antonio, TX for oral presentation.

2. Helber L*, Hay AN, Wagner B, Leeth CM, LeRoith T, Cecere TE, Lahmers KK, Andrews FM, Werre SR, **Johnson AL**, Clark CK, Pusterla N, Reed SM, Lindsay DS, Taylor SD, Estell KE, Furr M, MacKay RJ, del Piero F, Carossino M, Witonsky SG. Persistence of *Sarcocystis neurona* and histopathologic changes in horses with EPM. Submitted to 2022 Dorothy R. Havemeyer EPM Workshop, October 2022, Asheville, NC for oral presentation.

3. Enriquez CK, Morrow JK, Graves AJ, **Johnson AL***. Evaluation of real time polymerase chain reaction (rtPCR) as a diagnostic tool for identification of *Sarcocystis neurona* in cerebrospinal fluid of horses with equine protozoal myeloencephalitis. Submitted to 2022 Dorothy R. Havemeyer EPM Workshop, October 2022, Asheville, NC for oral presentation.

Grant Activity – Amy L. Johnson

Past:

Name of Grant & sponsor number	Funding Agency	Period of Grant	Type of Grant (see grant category below)	Role in Grant and percent effort	Annual Direct Cost	Annual Indirect Cost	Additional Comments
Identifying the role for IL-17- α in EPM affected horses	Virginia Horse Industry Board	July 2019- June 2020	PG – external (competitive)	Co-I	\$14,122 requested	n/a (not permitted)	Partial funding provided (\$6,700)
Discovery of a genetic predisposition for equine protozoal myeloencephalitis (EPM) susceptibility and associated gene dysregulation in clinically affected horses	Virginia-Maryland College of Veterinary Medicine Equine Research Competition (ERC)	7/1/2018-6/30/2019; 2 nd submission 7/1/2019-6/30/2020	PG- internal (competitive)	Co-I	\$19,858 (year 1); \$19,970 (year 2)	n/a (not permitted)	Partial funding received for 1 st submission; full funding received for 2 nd submission
Assessment of synovial fluid biomarkers in horses with radiographic evidence of cervical articular process joint osteoarthritis	Raymond Firestone Trust Research Fund	2/1/2018-1/31/2019	PG- internal (competitive)	Co-I	\$10,000	n/a (not permitted)	
Identification of a genetic predisposition for equine protozoal myeloencephalitis (EPM) susceptibility and associated gene dysregulation in clinically affected horses	Virginia-Maryland College of Veterinary Medicine Equine Research Fund	12/14/2017-6/1/2018	PG- internal (competitive)	Co-I	\$9,000	n/a (not permitted)	
Equine protozoal myeloencephalitis: identifying the immune response and role of infection	Virginia-Maryland College of Veterinary Medicine Equine Research Fund	7/1/2015-6/30/2016	PG- internal (competitive)	Co-I	\$19,998.02	n/a (not permitted)	Abstract #33
Normal antibody partitioning in horses – towards	Arabian Horse Association	4/15/2015-4/15/2017	PG – external (non-	PI	\$1,000 (\$2000 total over 2	n/a (not permitted)	Abstract #26; paper #47

a better diagnosis of Lyme disease.	- Region 15		competitive)		years)		
Measurement of digital laminar and skin temperatures during cryotherapy with a sleeve style ice boot in healthy and endotoxemic horses.	Raymond Firestone Trust Research Fund	11/1/2013-9/30/2014	PG - internal (competitive)	Co-PI	\$10,000	n/a (not permitted)	Abstract #29; paper #49
Comparison of two commercially available tests for antemortem diagnosis of equine protozoal myeloencephalitis.	Neurologic Research Endowment Fund	11/7/2011-10/31/2012	PG - internal (non-competitive)	PI	\$4,980	n/a (not permitted)	Abstract #16; paper #26
Rapid diagnosis of equine botulism types A, B, and C.	Grayson-Jockey Club Foundation, Inc.	4/1/2010-3/30/2012	PG - external (competitive)	Co-PI	\$16,657.50 (\$33,315 total over 2 years)	n/a (not permitted)	Paper #29
Botulism: a new diagnostic approach – real-time PCR test.	Grayson-Jockey Club Foundation, Inc.	4/1/2009 – 3/30/2010	PG - external (competitive)	Co-I	\$21,600	n/a (not permitted)	Abstracts #8 and 12; paper #18

Current:

Name of Grant & sponsor number	Funding Agency	Period of Grant	Type of Grant (see grant category below)	Role in Grant and percent effort	Annual Direct Cost	Annual Indirect Cost	Additional Comments
Is articular process joint OA a singular event? Investigations into equine intervertebral disc degeneration	Firestone-Rakers-Tulleners Research Fund	12/1/2020-11/30/2022	PG – internal (competitive)	Co-PI	\$14,800	n/a (not permitted)	
Is soluble CD14 (sCD14) increased in specific equine neurologic diseases?	Virginia Maryland College of Veterinary Medicine Equine Research Competition (ERC)	7/1/2021-6/30/2022	PG – internal (competitive)	Co-I	\$10,000.00	n/a (not permitted)	
Measurement of 8-hydroxy-2'-	Firestone-Rakers-	1/5/2022-12/31/2022	PG – internal	Co-PI	\$7,084.00	n/a (not permitted)	

deoxyguanosine as a marker of oxidative damage in horses with equine degenerative myeloencephalopathy versus other causes of spinal ataxia	Tulleners Research Fund		(competitive)				
Evaluation of real time polymerase chain reaction (rtPCR) as a diagnostic tool for identification of <i>Sarcocystis neurona</i> in cerebrospinal fluid of horses with confirmed Equine Protozoal Myeloencephalitis	Firestone-Rakers-Tulleners Research Fund	1/5/2022-12/31/2022	PG – internal (competitive)	Co-PI	\$2,950.00	n/a (not permitted)	
Cytokine profiles in cerebrospinal fluid of horses with neurologic diseases	Firestone-Rakers-Tulleners Research Fund	1/5/2022-12/31/2022	PG – internal (competitive)	Co-PI	\$10,958.00	n/a (not permitted)	

Pending:

Name of Grant & sponsor number	Funding Agency	Period of Grant	Type of Grant (see grant category below)	Role in Grant and percent effort	Annual Direct Cost	Annual Indirect Cost	Additional Comments
Validation of Biomarkers for Equine Neurodegeneration	Grayson-Jockey Club Research Foundation	4/1/2022-3/30/2024	PG – external (competitive)	Co-I	\$102,110	n/a (not permitted)	

ACADEMIC COMMITTEES AT UNIVERSITY OF PENNSYLVANIA:

DEPARTMENT COMMITTEES:

- NBC Quality Assurance Committee, 2008-2016
- NBC Clinical Competency Practical Exam Committee (ICVM IV), 2012-2014
- NBC EPEF II (Facility Design) Committee, 2013-2016
- NBC CT committee and Imaging Users Group, 2014-2016
- NBC Patient Care Task Force, May 2014-August 2014
- NBC Advisory Committee for Surgical, Imaging, Treatment, and Translational Center 2017-present
- NBC Equine/Companion Small Ruminant Internal Review Task Force, 2017-2018
- NBC Department Technician Task Force, 2019

SCHOOL COMMITTEES:

- Electronic Medical Record Committee, 2011-2017
- Education Committee, 2012-2014, 2016-2018
- Curriculum Committee, 2013-2014
- Radiology Faculty Search Committee, 2013-2016
- Large Animal Pathology Faculty Search Committee, 2016-2017
- Committee on the Academic Status of Students, 2016-2017
- CS-NBC Department Chair Search Committee, 2018-2019
- Large Animal Pathology Faculty Search Committee, 2020-2021
- Large Animal Surgery Faculty Search Committee Chair, 2021-2022

UNIVERSITY COMMITTEES: n/a

ACADEMIC COMMITTEES OUTSIDE OF UNIVERSITY OF PENNSYLVANIA:

Thesis committees:

- Mary Rankin, M.S. University of Delaware 2010
- Megan Caputo, M.S. University of Delaware 2012
- Elizabeth Pritchett, M.S. University of Delaware 2013
- Emily Stearns, MSc. The Royal (Dick) School of Veterinary Studies, University of Edinburgh, 2017

FORMAL FACULTY MENTORING:

Faculty Mentees (Assistant Professor level) at Univ. Penn:

- Olivia Lorello, VMD, PhD, Assistant Professor (AC) of Clinical Equine Field Service
- Monica Midon, DVM, M, MS, Assistant Professor (CE) of Anesthesiology

STUDENT TRAINING:

Predoctoral:

n/a

Postdoctoral:

Residents

(* resident for whom I served as primary advisor)

- Andrew Van Eps, DACVIM-LAIM 2008
- Anna Hollis, DACVIM-LAIM 2009

- Kelly Kalf, DACVIM-LAIM 2009
- Joan Norton, DACVIM-LAIM 2010
- Maeva May, DACVIM-LAIM 2010
- **Jennifer Read***, DACVIM-LAIM 2011
- Gemalice Tyner, DACVIM-LAIM 2014
- Michelle Harris, DACVIM-LAIM 2012
- William Gilsean, DACVIM-LAIM 2012
- Michelle Abraham, DACVIM-LAIM 2015
- **Joy Tomlinson***, DACVIM-LAIM 2014
- Emilie Setlakwe, DACVIM-LAIM 2015
- **Laura Johnstone***, DACVIM-LAIM 2015
- **Neil Mittelman***, DACVIM-LAIM 2017
- Daniela Luethy, DACVIM-LAIM 2018
- Elizabeth Hodge, DACVIM-LAIM 2019
- Caitlin Moore
- **Courtney Pope***
- **Alicia Long***
- **Sarah Colmer***
- Laurence Leduc
- Andrea Oliver
- **Carla Enriquez***
- **Megan Palmisano***
- Clarisa Romero

Interns

(only listed if I served as primary advisor)

- Neil Mittelman (2013-2014)
- Sarah Schale (2016-2017)
- Flavie Payette (2021-2022)

Visiting residents and fellows

(unless otherwise noted, visited to obtain large animal neurology training required for their specialty)

- Jenny Mayer, VMD; Loomis Basin Equine Medical Center, ACVECC candidate; 2 weeks, 2014
- Carmen Yeamans, DVM, MRCVS; University of Glasgow, ECVN candidate; 2 weeks, 2014
- Karie Vander Werf, DVM, DACVIM-LAIM; University of Illinois, ACVECC candidate; 2 weeks, 2014
- Shanshan Guo, BVSc, BSc, MRCVS; Peace Ave Veterinary Clinic, Hong Kong, ECVN candidate; 2 weeks, 2016
- Jamie Kopper, DVM, PhD, DACVIM-LAIM; University of Michigan, ACVECC candidate; 2 weeks, 2016
- Alison Gardner, DVM, MS, DACVS-LA; The Ohio State University, ACVECC candidate; 2 weeks, 2017
- Maia Aitken, DVM, DACVS-LA; University of Pennsylvania, ACVECC candidate; 2 weeks, 2018
- Chih-ching (Abo) Wu, DVM, MS; National Taiwan University Veterinary Hospital, ECVN candidate; 2 weeks, 2018
- Neil Mittelman, DVM, DACVIM-LAIM; University of Pennsylvania, ACVIM-Neurology candidate, 1 week, 2019
- Stacey Brady, BVSc (Hons), MSc, MRCVS; University of Melbourne, ECVN candidate, 2 weeks, 2019
- Simon Choi, BVSc; University of Melbourne, ECVN candidate, 2 weeks, 2019
- Megan Burke, DVM, DACVS-LA; North Carolina State University, ACVECC candidate; 2 weeks, 2021
- Alicia Long, DVM; University of Pennsylvania, ACVECC candidate; 2 weeks, 2022

SEMINARS AND ORAL PRESENTATIONS BY INVITATION: (Poster presentations not included)

For veterinarians:

1. Equine Practitioners Conference at Cornell University, November 2006, Ithaca, NY.
 - Abdominal and thoracic ultrasonography (3 hrs)
2. Delaware Veterinary Medical Association and Equine Council, Emergency Meeting, December 2008, Wilmington, DE.
 - Equine herpesvirus -1 – diagnosis, management, and outbreak control (1 hr)
3. Maryland Veterinary Medical Association, 2009 Fall Conference, November 2009, Timonium, MD.
 - A video review of diagnosing neurologic disease in horses (3 hrs; 5 p. proceedings)
 - Fevers of unknown origin (1.5 hrs; 5 p. proceedings)
 - Gastrointestinal problems that won't go away: chronic diarrhea and/or colic (1.5 hrs; 5 p. proceedings)
4. North American Veterinary Conference, Conference 2010, January 2010, Orlando, FL.
 - Equine protozoal myeloencephalitis – an update on diagnosis and treatment (1 hr; 4 p. proceedings)
 - Equine herpesvirus-1- diagnosis, management, and outbreak control (1 hr; 4p. proceedings)
 - Field evaluation of the neurologic horse – lesion localization and differential diagnoses (1 hr; 4 p. proceedings)
 - Vestibular disease in horses (15 min; 2 p. proceedings)
 - Lyme disease in horses (15 min; 2 p. proceedings)
5. University of Pennsylvania School of Veterinary Medicine, 110th Penn Annual Conference, March 2010, Philadelphia, PA.
 - EPM or not? Differentiating EPM from other equine problems (1 hr; 3 p. proceedings)
6. Hudson Valley Veterinary Medical Society, Winter CE Meeting, January 2011, Rhinebeck, NY.
 - EPM or not? Common neurologic problems (1.5 hrs)
7. New York State Veterinary Conference at Cornell University College of Veterinary Medicine, October 2011, Ithaca, NY.
 - Update on neurologic diseases I: EPM, Lyme, and Botulism (1 hr)
 - Update on neurologic diseases II: EHV-1, WNV, and more (1 hr)
8. University of Pennsylvania School of Veterinary Medicine, 112th Penn Annual Conference, March 2012, Philadelphia, PA.
 - Head trauma, neck injuries, and other neurological emergencies (1 hr; 4 p. proceedings)
 - Lunch with the experts – equine medicine (1 hr)
9. Maryland Veterinary Medical Association, 2012 Summer Conference, June 2012, Ocean City, MD.
 - Neurologic emergencies – what to do (2 hrs)
 - Interpreting neurologic diagnostic tests – how to know what's real (2 hrs)
 - Hot topics in equine internal medicine (2 hrs)
10. North American Veterinary Conference, Conference 2013, January 2013, Orlando, FL.
 - Approach to the ataxic horse (75 min; 6 p. proceedings)
 - Approach to the weak horse (1 hr; 3 p. proceedings)
 - Approach to vestibular disease (1 hr; 3 p. proceedings)
 - Seizures – what to do (15 min; 2 p. proceedings)

- Intestinal encephalopathy (15 min; 2 p. proceedings)
11. American College of Veterinary Internal Medicine Forum, June 2013, Seattle, WA.
 - Advances in the diagnosis and treatment of botulism (1 hr; 3 p. proceedings)
 - SIG (Special Interest Group): Equine emerging issues luncheon: Updates on emerging and re-emerging equine diseases: The year in review – panelist (1.5 hr)
 12. American Association of Equine Practitioners Annual Convention, December 2013, Nashville, TN.
 - Lyme disease table topic (1.5 hrs)
 13. Virginia Veterinary Conference, February 2014, Roanoke, VA.
 - Normal or abnormal – performing a neuro exam and knowing what to do next! (2 hr; 8 p. proceedings)
 - EPM, Lyme, and more – interpretation of diagnostic tests and treatment options (2 hr; 6 p. proceedings)
 14. American College of Veterinary Internal Medicine Forum, June 2014, Nashville, TN.
 - Equine Lyme neuroborreliosis: perceptions and reality (1 hr; 3 p. proceedings)
 15. NBC Equine Herpesvirus 1 Informational Meeting, June 2014, Kennett Square, PA.
 - Clinical case management (1 hr joint presentation with A. Simeone and H. Aceto)
 16. EPM Workshop, hosted by the Equine Protozoal Myeloencephalitis Society, October 2014, Lexington, KY.
 - Laboratory diagnostics (20 min joint presentation with J. Morrow + 40 min moderated discussion; 4 p. proceedings)
 17. American Association of Equine Practitioners Annual Convention, December 2014, Salt Lake City, UT.
 - Lyme disease table topic (1.5 hrs)
 - EPM diagnostics and treatment: what's new (30 min), sponsored by Merck Animal Health
 18. North American Veterinary Conference, Conference 2015, January 2015, Orlando, FL.
 - How to perform a neurologic exam and localize the problem (75 min, co-presenter with M. Aleman; 6 p. proceedings)
 - Brain pain – common encephalopathies in horses (1 hr; 4 p. proceedings)
 - Fact or fiction – equine Lyme neuroborreliosis (1 hr; 3 p. proceedings)
 - Crooked overnight – acquired scoliosis in horses (15 min; 2 p. proceedings)
 19. American Association of Equine Practitioners Focus on Ambulatory, July 2015, Minneapolis, MN.
 - Review of field neurologic examinations: localizing the lesion (2 hr, 6 p. proceedings)
 - Review of top four neurologic emergencies (1 hr, 7 p. proceedings)
 - Review of equine protozoal myeloencephalitis (EPM) and Lyme disease (1 hr, 7 p. proceedings)
 20. Hambletonian Continuing Education Seminar, August 2015, E. Rutherford, NJ.
 - Botulism in horses: what have we learned in the last ten years? (1 hr; 2 p. proceedings)
 21. Invited seminar, Department of Population Medicine and Diagnostic Sciences, Cornell University College of Veterinary Medicine, October 2015, Ithaca, NY.
 - Equine Lyme neuroborreliosis (1 hr)
 22. American Association of Equine Practitioners Annual Convention, December 2015, Las Vegas, NV.
 - In depth: laboratory diagnostics for neurologic disease – EPM, Lyme, and more! (1 hr, 15 p. proceedings)
 - Interesting case medley (30 min, shared with other speakers)

- Lyme disease table topic (1.5 hr)
 - EPM roundtable panelist for EquiManagement (2 hr, sponsored by Merck)
23. Myhre Equine Clinic 36th Annual Veterinarian and Technician Conference, March 2016, Rochester, NH. *Equine Neurology, co-presenter with Alexander de Lahunta*
- Equine neurology case studies part 1 (spinal cord and neuromuscular) (5 hr co-presented with de Lahunta, 9 p. co-authored proceedings)
 - Equine Lyme neuroborreliosis (1 hr)
 - Review of field neurologic examinations: localizing the lesion (2 hr, 6 p. proceedings)
 - Case medley, focusing on reasons for collapse (1.5 hr)
 - Wet lab – clinical cases suspected of having neurologic disease (4 hr)
24. Hambletonian Continuing Education Seminar, August 2016, E. Rutherford, NJ.
- Review of the top four neurologic emergencies (1 hr, 2 p. proceedings)
25. Updates on Equine Neurology Symposium, September 2016, Kennett Square, PA. *Co-sponsored by Merial, Henry Schein, and University of Pennsylvania New Bolton Center.*
- Conference organizer and NBC representative
 - Lyme disease and neuroborreliosis (45 min, 4 p. proceedings)
 - Neck problems – clinical signs and diagnosis (45 min, 5 p. proceedings)
 - Video case studies and panel discussion (2 hr, shared with 2 other speakers)
26. Northeast Association of Equine Practitioners Annual Symposium, September 2016, Niagara Falls, NY.
- The pre-purchase neurologic exam – “fancy or ataxic?” (1 hr, 3 p. proceedings)
 - EPM and Lyme serology – what to tell owners? (1 hr, 5 p. proceedings)
 - Cervical radiographs – are they predictive? (1 hr, 4 p. proceedings)
 - Wet-lab: Pre-purchase neurological examination (2 hrs)
27. Quebec Veterinary Congress (Annual Convention), October 2016, Quebec City, Quebec, Canada.
- How to perform a neurologic exam in the field and localize the lesion (1 hr, 6 p. proceedings)
 - Review of EPM and Lyme diagnosis and treatment (1 hr, 7 p. proceedings)
 - Top 4 neurologic emergencies – what to do (1 hr, 7 p. proceedings)
 - Cervical evaluation (1.5 hr, *unscheduled lecture given due to absence of another speaker*)
28. American Association of Equine Practitioners 62nd Annual Convention, December 2016, Orlando, FL.
- Table topic: Diagnosing the neurological horse in the field (1.5 hrs)
29. American Association of Equine Practitioners 19th Resort Symposium, January 2017, Grand Cayman, Cayman Islands.
- Neurologic, lame, or both? (1 hr, 5 p. proceedings)
 - Equine protozoal myeloencephalitis – one disease, many symptoms (1 hr, 5 p. proceedings)
 - Lyme disease and neuroborreliosis – what do we know? (1 hr, 5 p. proceedings)
 - Headshaking – where to start? (1 hr, 5 p. proceedings)
 - Cervical radiographs – a neurologist’s perspective (1 hr, 8 p. proceedings)
30. Myhre Equine Clinic 37th Annual Veterinarian and Technician Conference, March 2017, Rochester, NH. *Equine Neurology Part 2, co-presenter with Alexander de Lahunta.*
- Laboratory tests for neurological disease (1 hr, 5 p. proceedings)
 - Cervical radiographs – a neurologist’s perspective (1 hr, 8 p. proceedings)
 - Headshaking – where to start? (1 hr, 5 p. proceedings)
 - Neurologic, lame, or both? (1 hr, 5 p. proceedings)
 - Lyme disease and neuroborreliosis (1 hr, 5 p. proceedings)
 - Interesting case medley (video presentation) (2 hr)

- Lab/demo on clinic patients with neurologic disease (3 hr)
31. American College of Veterinary Internal Medicine Forum, June 2017, National Harbor, MD.
 - Equine Lyme consensus statement panelist (1 hr)
 32. Florida Association of Equine Practitioners 13th Annual Promoting Excellence Symposium, October 2017, Orlando, FL.
 - Lyme disease and botulism in horses – what is the clinical relevance? (1 hr, 10 p. proceedings)
 - Options for neck imaging: radiographs to robotic CT – what can we learn? (1 hr, 5 p. proceedings)
 - Tips for handling neurologic emergencies in the field (1 hr, 8 p. proceedings)
 33. 2nd EPM Workshop, hosted by the Equine Protozoal Myeloencephalitis Society, October 2017, Tahoe City, CA.
 - Laboratory diagnostics (session moderator including 15 min joint presentation with Jennifer Morrow; 4 p. proceedings)
 34. New Jersey Association of Equine Practitioners Continuing Education Meeting at NJ Equine, February 2018, Millstone, NJ.
 - Neurologic case studies (2 hr panel discussion with Rachel Gardner and Rodney Belgrave)
 35. American Veterinary Medical Association Convention, July 2018, Denver, CO.
 - How to perform a great neurologic examination in the field (1 hr, 4 p. proceedings)
 - Neurologic emergencies (1 hr, 4 p. proceedings)
 - Practical thoughts on the ataxic horse (1 hr, 4 p. proceedings)
 - Equine neurology case discussions (1 hr, 3 p. proceedings)
 36. Penn Annual Conference, September 2018, Wilmington, DE.
 - EPM strikes again (or is it Lyme this time?): Infectious disease update and serologic interpretation (1 hr, 4 p. proceedings)
 - Pain in the neck: Diagnosis of cervical problems and pre-purchase considerations (1 hr, 4 p. proceedings)
 - Lameness, neuro, or just plain weird: Case-based video medley (1 hr, 3 p. proceedings)
 37. New York State Veterinary Conference at Cornell University, October 2018, Ithaca, NY.
 - How panicked should I be? The ataxic, febrile horse (1 hr, 3 p. proceedings)
 - In honor of Dr. D: equine neurology through video case studies (1 hr, 3 p. proceedings)
 - Neurologic or orthopedic? Unraveling equine gait analysis (2 hrs, 3 p. proceedings)
 - The meaning of it all: how to interpret neurodiagnostics (2 hrs, 5 p. proceedings)
 38. Rhode Island Veterinary Medical Association Scientific Seminar, December 2018, Newport, RI.
 - EPM strikes again (or is it Lyme this time?): Infectious disease update and serologic interpretation (1.5 hr, 4 p. proceedings)
 - Pain in the neck: Diagnosis of cervical problems and pre-purchase considerations (1.5 hr, 4 p. proceedings)
 - How panicked should I be? The ataxic, febrile horse (1.5 hr, 3 p. proceedings)
 - Lameness, neuro, or just plain weird: Case-based video medley (1.5 hr, 3 p. proceedings)
 39. American College of Veterinary Internal Medicine Forum, June 2019, Phoenix, AZ.
 - Equine degenerative myeloencephalopathy – an updated clinical perspective (1 hr, 4 p. proceedings)
 - One of 13 sessions included in “Highlights of ACVIM” session presented at ECEIM by Dr. Allison J. Stewart, November 2019

40. Equine Neurological Diseases seminar series, sponsored by Zoetis Canada Inc., October 2019, Lévis, QC and St-Eustache, QC, Canada.
 - How to approach equine neurology in the field (3 hrs, repeated twice, 9 p. proceedings)
41. American Association of Equine Practitioners Convention, December 2019, Denver, CO.
 - Kester News Hour (1 hr)
 - One of 5 panelists responsible for content and presentation of KNH
 - How to use and interpret serological tests for EPM and Lyme disease (20 min, 5 p. proceedings)
42. 10th Leipziger Tierärztekongress, January 2020, Leipzig, Germany.
 - Diagnostic approach to the ataxic horse (30 min, 4 p. proceedings)
 - Fact or fiction? Equine Lyme neuroborreliosis (30 min, 4 p. proceedings)
 - Case studies (30 min, joint presentation with Lutz Göhring)
43. University of Kentucky Veterinary Science Seminar, February 2020, Lexington, KY.
 - Current challenges in equine neurology: a clinician's perspective (1 hr, no proceedings)
44. Rood and Riddle Workshop on Equine Neurologic Diseases, February 2020, Lexington, KY.
 - Two important diseases: EDM (more common than you think!) and Lyme (less common than your clients think!) (1 hr, 10 p. proceedings)
 - Spinal tap lab (2 hrs, no proceedings)
 - Case presentations (3 hrs, shared session with other presenters, no proceedings)
45. American Association of Equine Practitioners Virtual CE Summer Series, August 2020.
 - Cracking the Performance Horse Code: Interdisciplinary Strategies to Maximize Clinical Outcome. Week 3. Internal Medicine Meets Sports Medicine: Working Together to Manage the Equine Athlete (4 hrs with co-presenter Elizabeth Davidson and moderator Jackie Christakos)
46. Vet PD (Veterinary Professional Development) Live-stream Panel Discussion, September 2020.
 - Wobbler Surgery (Cervical Stabilization) – Does it actually work? (3 hrs with co-presenters Barrie Grant, Steve Reed, and Brett Woodie and moderator Jonathan Anderson)
47. Northeast Association of Equine Practitioners Virtual Symposium, September 2020
 - EDM is more common than you think: An updated clinical perspective (1 hr)
 - What's new in neurology? Testing and treatment tips (1 hr)
48. Annual Equine Practitioner's Conference, Germany. Bpt-Kongress DIGITAL Live-Webinar, November 2020.
 - Pferd Innere Medizin: Infektionskrankheiten des ZNS. Neuroborreliosis (20 min)
49. American Association of Equine Practitioners Virtual Annual Convention, December 2020.
 - Kester News Hour (1 hr)
 - One of 5 panelists responsible for content and presentation of KNH
 - Virtual Table Topic: Diagnosing the neurologic horse in the field (1.5 hr)
50. Maryland Veterinary Medical Association, Spring Webinar Series, April 2021
 - Equine Degenerative Myeloencephalopathy (EDM) – An Updated Clinical Perspective (1 hr)
 - Testing and Treatment Tips for Neurologic Cases (1 hr)
51. Vet PD (Veterinary Professional Development) Live-stream Panel Discussion, July 2021.
 - Lyme Disease – Clinical Signs, Diagnosis, Differential Diagnoses, Treatments, and Prevention (3 hrs with co-presenters Eric Swinebroad and Lutz Goehring and moderator Thomas Divers)
52. EquiManagement Podcast Disease Du Jour, September 2021.
 - Equine Rabies (Episode 64, 30 min)

53. American Association of Equine Practitioners Annual Convention, December 2021, Nashville, TN.
 - Kester News Hour (1 hr)
 - One of 5 panelists responsible for content and presentation of KNH
 - Invited speaker for “Medical Reasons for Poor Performance” session
 - How to Diagnose Equine Degenerative Myeloencephalopathy in Sport Horses (20 min)
 - Table Topic: Diagnosing the neurologic horse in the field (1.5 hr)
 - Virtual Table Topic: Diagnosing the neurologic horse in the field (1.5 hr)
54. Capacitación Veterinaria, Mexico City (live via Zoom, with translator), December 2021.
 - Síndrome de Wobbler — Mielopatía estenótica equino (Wobbler Syndrome - Equine Stenotic Myelopathy) (1 hr)
55. The Equine Practice Company. Equine Practitioner’s Program. Lecture recorded via Zoom for on-demand viewing, March 2022.
 - Clinical approach to neurologic disease (30 min, 1 p. proceedings)
56. American College of Veterinary Internal Medicine Forum, June 2022, Austin, TX.
 - Equine Neurology Roundtable – Cases and Controversies (90 minutes)
 - One of 2 invited speakers responsible for content and discussion; Steve Reed is the other presenter and Lutz Göhring is the moderator)
 - Equine Emerging and Re-Emerging Disease Luncheon (90 minutes, sponsored by Merck)
 - One of 2 invited speakers responsible for presenting a lecture (co-presenter with Emma Adam)
 - My contribution: Old diseases, new twists – EDM and EHM (35 min)
57. American Veterinary Medical Association Convention, August 2022, Philadelphia, PA.
 - Equine Neurology Updates (1 hr)
58. American College of Veterinary Internal Medicine Advanced Veterinary Neuroscience Course (“Brain Camp”), August 2022, Gainesville, FL.
 - One of 2 invited speakers responsible for large animal neurology content (8 hrs) at this specialist course (co-presenter with Monica Aleman)
 - Total lecture time 4 hrs
59. American Association of Equine Practitioners Annual Convention, November 2022, San Antonio, TX.
 - Kester News Hour (1 hr)
 - One of 5 panelists responsible for content and presentation of KNH

For veterinary students and/or staff:

1. Guest lecture at Cornell University for VTMED 6538, Special Problems in Equine Medicine, spring semester 2011.
 - Equine neurology (2 hrs)
2. Guest lecture at Cornell University for VTMED 6539, Disorders of Large-Animal Neonates, spring semesters 2011 and 2012.
 - Neurologic problems of foals (1 hr)
3. University of Pennsylvania Neurology Club, fall semester 2016.
 - Equine gait analysis (1 hr lunch talk)
4. University of Pennsylvania Neurology Club, spring semester 2018.
 - Large animal gait analysis (1 hr lunch talk)

5. SAVMA Symposium 2018 at Penn Vet, March 2018.
 - Equine neurologic examination (2 hr lab)
6. University of Pennsylvania Neurology Club, spring semester 2019.
 - Equine neurologic examination (2 hr lab)
7. Guest lecture at Cornell University for VTMED 6572, Equine Sports Medicine, spring semester 2019.
 - Equine neurology cases (neuromuscular problems, 2 hr)
8. Guest lecture at Cornell University for VTMED 6572, Equine Sports Medicine, spring semester 2020 (distance learning due to COVID-19).
 - Lameness or neurologic? (1 hr)
 - Laboratory diagnostics for neurologic disease: EPM, Lyme, or neither? (1 hr)
9. New Bolton Center Tuesday morning research seminar, November 2021.
 - Equine Degenerative Myeloencephalopathy (EDM) Update – Clinical and Research Perspectives (1 hr)
10. New Bolton Center Nursing and Technician continuing education, February 2022.
 - Equine neurologic emergencies (1 hr)

For the public:

1. B.W. Furlong & Associates Mare and Foal Seminar, March 2004, Bridgewater, NJ.
 - Testing blood and milk immunoglobulin levels (1 hr)
2. Cornell University Veterinary Seminar at Cosequin Stuart Horse Trials, July 2005, Farmington, NY.
 - Equine emergencies (0.5 hrs)
3. The Breeders' College at French Hollow Alpacas, August 2006, Berlin, VT.
 - Alpaca critical care and emergency management (3 hrs)
4. Cornell University Camelid Conference for Breeders and Veterinarians, March 2007, Ithaca, NY.
 - Camelid neonatology (1 hr)
 - Basic procedures laboratory (1 hr)
5. Cornell University Open House, April 2007, Ithaca, NY.
 - Stories from the Large Animal ER (1 hr)
6. Chester County Adult Pony Club Spring Meeting, April 2009, Unionville, PA.
 - Neurologic problems in horses (1 hr)
7. Neogen Veterinarian and Client Education Seminar, April 2009, VT.
 - Equine botulism (1 hr)
8. Equine Behavioral Short Course at New Bolton Center, October 2009, Kennett Square, PA.
 - Is it physical or psychological? (1 hr)
9. Equine Behavioral Short Course at New Bolton Center, September 2010, Kennett Square, PA.
 - Is it physical or psychological? (1 hr)
10. Television appearance (expert panel) on RFD-TV "LIVE," filmed September 2010, Nashville, TN.
 - EPM 2010: where we are now (1 hr, aired Sept. 27, 2010)

11. Dressage at Devon Seminar Series, October 2010, Devon, PA.
 - The unintentional half-pass: how to recognize signs of neurologic disease and its common causes (1 hr)
12. Genesee Valley Equine Clinic Winter Horse Health Seminar, February 2011, Scottsville, NY.
 - Worrisome wobbling: what to do for the neurologic horse (1 hr)
13. Mid-Atlantic Alpaca Association (MAPACA) Jubilee, April 2011, Harrisburg, PA.
 - To deworm or not to deworm: a parasitology primer (1 hr)
14. The Horse.com Webinar, September 2011
 - The many faces of EPM take 2 (2 hrs)
15. Equine Behavioral Short Course at New Bolton Center, November 2011, Kennett Square, PA.
 - Is it physical or psychological? (1.5 hrs)
16. Equine Behavioral Short Course at New Bolton Center, March 2012, Kennett Square, PA.
 - Is it physical or psychological? (1.5 hrs)
17. First Tuesday Lecture Series at New Bolton Center, March 2013, Kennett Square, PA.
 - Worrisome wobbling: what to do for the neurologic horse (1 hr)
18. The Horse “Ask the Vet Live” podcast, April 2013.
 - Botulism (1 hr)
19. First Tuesday Lecture Series at New Bolton Center, September 2016, Kennett Square, PA.
 - Neurological exam: evaluate your horse before someone gets hurt (1 hr)
20. The Arabian Horse Association, Region 15 fall meeting, November 2016, Kennett Square, PA.
 - Fact or fiction – equine Lyme disease (1 hr)
21. First Tuesday Lecture Series at New Bolton Center, October 2018, Kennett Square, PA.
 - Integrating Innovation in Imaging: Advancements in Neurology (1 hr, with Dr. Kate Wulster)
22. University of Pennsylvania School of Veterinary Medicine Board of Overseers Spring 2019 meeting.
 - Equine neurology demonstration (30 min)
23. First Tuesday Lecture Series at New Bolton Center, December 2019, Kennett Square, PA.
 - Equine neurologic diseases: EHV, EPM, EDM, CVM – what’s behind the initials? (1 hr)
24. New Bolton Center Special Donor Event, December 2020.
 - 5-minute summary of faculty research in conjunction with other selected faculty members for select group of donors (1 hr total)
25. First Tuesday Lecture Series at New Bolton Center, November 2021, Kennett Square, PA.
 - Understanding Equine Degenerative Myeloencephalopathy (EDM) (1 hr)

TEACHING RESPONSIBILITIES:

2008-pres. LAIM resident boards review rounds: Variable yearly schedule, focusing on topics relevant to certification exams, generally ~5-6 hr annually

2008-pres. VCSN632 Diseases and Management of Sheep and Goats; Neurologic diseases (lecture 3 hr); Course organizer 2009

2008-pres. VMED613 Medicine/Surgery III; Lectures: Equine neurologic diseases (2008-pres., 2 hr), Sheep, goat, and camelid neurologic diseases (2009-pres., 1 hr), Bovine neurologic diseases (2021, 2 hr)

2008-pres. VCSN640 Large Animal Medicine; Lectures: Equine neurologic diseases (2009-pres.), Theories of diagnosis – neurologic diseases (2010-pres.); Labs (2008-pres.): Equine urinary catheterization, Equine palpation per rectum, Equine neurologic examination (lecture 3 hr; lab 8-10 hr)

2008-pres. VCSN648 Equine Sports Medicine; Lameness vs. neurologic disease, Laboratory diagnostics for neurologic disease: EPM, Lyme, or neither? (2015-2020), Cervical evaluation (2015-pres), Collapsing horse (2019), Case studies discussion (2019), Equine degenerative myeloencephalopathy (2021), Neurologic testing and treatment tips (2021); (lecture 3 hr); Course organizer 2019

2008-pres. VMED609 Infectious and Metabolic Diseases; Botulism and Tetanus (2008-pres), Listeriosis (2022-pres), Rabies (2022-pres); (lecture 3 hr)

2011-pres. VPTH603 Core Parasitology; *Sarcocystis* (lecture 1 hr; 2 office hours in 2020)

2011. Organizer for monthly NBC Morbidity and Mortality rounds (faculty, staff, and house officers)

2011-pres. Coordinate and present biweekly large animal neurology rounds (1 hr; for faculty, house officers, and students)

2012-2013. VMED602 ICVM III; Equine respiratory evaluation (lab 2 hr)

2012-pres. VMED618 ICVM IV; Equine physical exam and procedures (lab 3.5 – 4.5 hr)

2013-pres. NBC hospital rotations – 1 hr/month formal neurology case-based teaching rounds for students on all NBC hospital rotations (stopped when rounds no longer combined; switched to ~4 hr/month); patient care rotation rounds (2-3 hours/month 2020-2021)

2017-pres. VMED600 ICVM; Bovine physical exam and procedures (lab 3 hr), Equine physical exam and procedures (lab 1.5 hr); *schedule varies depending on year*

2018-pres. VMED602 ICVM III; Bovine physical exam (lab 3 hr), Equine physical exam (lab 1.5 hr); *schedule varies depending on year*

May 2021-pres. VCSN700/770 LA Medicine rotation. Course organizer.

TEACHING CHRONICLE – page 1
Amy L. Johnson

Academic Year	Semester	Course #	Course Name	Student Number	Topic	Lecture Hours	Lab Hours
2008-2009	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 115	Equine neurologic diseases	2	
	Spring	VCSN640	Large Animal Medicine	About 100	Equine urinary catheterization; equine palpation per rectum		10
	Spring	VCSN648	Equine Sports Medicine	About 60	Lameness vs. neurologic disease	1	
	Spring	VMED609	Infectious and Metabolic Diseases	About 115	Botulism and Tetanus	1	
2008-2009 total lecture = 7 hours; total lab = 10 hours							
2009-2010	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 115	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 100	Equine neurologic diseases; equine urinary catheterization; equine palpation per rectum	1	10
	Spring	VCSN648	Equine Sports Medicine	About 60	Lameness vs. neurologic disease	1	
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
2009-2010 total lecture = 9 hours; total							

lab = 10 hours							
2010-2011	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 110	Equine neurologic diseases; equine neurologic examination; equine palpation per rectum	2	10
	Spring	VCSN648	Equine Sports Medicine	About 60	Lameness vs. neurologic disease	1	
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
2010-2011 total lecture = 10 hours; total lab = 10 hours							
2011-2012	Fall	VPTH603	Core Parasitology	About 125	<i>Sarcocystis</i>	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 90	Equine neurologic diseases; equine neurologic examination; equine palpation per rectum	3	10
	Spring	VCSN648	Equine Sports Medicine	About 50	Lameness vs. neurologic disease	1	
	Spring	VMED609	Infectious and Metabolic	About 125	Botulism and tetanus	1	

			Diseases				
2011-2012 total lecture = 12 hours; total lab = 10 hours							
2012-2013	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 90	Equine neurologic diseases; equine neurologic examination; equine palpation per rectum	3	10
	Spring	VCSN648	Equine Sports Medicine	About 45	Lameness vs. neurologic disease	1	
	Spring	VMED609	Infectious and Metabolic Diseases	About 120	Botulism and tetanus	1	
	Spring	VMED602	ICVM III	About 125	Equine respiratory evaluation		2
	Spring	VMED618	ICVM IV	About 125	Equine physical exam and procedures		3.5
2012-2013 total lecture = 8 hours; total lab = 15.5 hours							
2013-2014	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 90	Equine neurologic diseases; equine neurologic examination;	3	10

					equine palpation per rectum		
	Spring	VCSN648	Equine Sports Medicine	About 45	Lameness vs. neurologic disease	1	
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
	Spring	VMED602	ICVM III	About 125	Equine respiratory evaluation		2
	Spring	VMED618	ICVM IV	About 125	Equine physical exam and procedures		3.5
2013-2014 total lecture = 11 hours; total lab = 15.5 hours							
2014-2015	Fall	VPTH603	Core Parasitology	About 125	<i>Sarcocystis</i>	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 90	Equine neurologic diseases; equine neurologic examination; equine palpation per rectum	3	8
	Spring	VCSN648	Equine Sports Medicine	About 45	Lameness vs. neurologic disease	1	
2014-2015 total lecture = 11 hours; total lab = 8 hours							
2015-2016	Fall	VPTH603	Core Parasitology	About 125	<i>Sarcocystis</i>	1	
	Fall	VCSN632	Diseases and	About 80	Neurologic diseases	3	

			Management of Sheep and Goats				
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases; sheep, goat, and camelid neurologic diseases	3	
	Spring	VCSN640	Large Animal Medicine	About 90	Equine neurologic diseases; equine neurologic examination; equine palpation per rectum	2	10
	Spring	VCSN648	Equine Sports Medicine	About 45	Lameness vs. neurologic disease; lab diagnostics for neurologic disease, cervical vertebral column evaluation	3	
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
	Spring	VMED618	ICVM IV	About 125	Equine physical exam and procedures		3.5
2015-2016							
total lecture =							
13 hours;							
total lab =							
13.5 hours							
2016-2017	Fall	VPTH603	Core Parasitology	About 125	<i>Sarcocystis</i>	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases (2 h); sheep, goat, and camelid neurologic diseases (1 h)	3	
	Spring	VCSN640	Large Animal Medicine	About 80	Equine neurologic diseases; equine neurologic examination; equine palpation per	2	9.5

					rectum		
	Spring	VCSN648	Equine Sports Medicine	About 22	Lameness vs. neurologic disease; lab diagnostics for neurologic disease, cervical vertebral column evaluation	3	
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
	Spring	VMED618	ICVM IV	About 125	Equine physical exam and procedures		4
2016-2017 total lecture = 13 hours; total lab = 13.5 hours							
2017-2018	Fall	VPTH603	Core Parasitology	About 125	<i>Sarcocystis</i>	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases (2 h); sheep, goat, and camelid neurologic diseases (1 h)	3	
	Fall	VMED600	Introduction to Clinical Veterinary Medicine (ICVM)	About 125 (12 in lab)	Bovine handling and physical exam		3
	Spring	VCSN640	Large Animal Medicine	About 80	Equine neurologic diseases; equine neurologic examination; equine palpation per rectum	2	9.5
	Spring	VCSN648	Equine Sports Medicine	About 25	Lameness vs. neurologic disease; lab diagnostics for neurologic disease, cervical vertebral column evaluation	3	

	Spring	VMED602	ICVM III	About 125 (12 in lab)	Bovine physical exam		3
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
	Spring	VMED618	ICVM IV	About 125	Equine physical exam and procedures		4
2017-2018 total lecture = 13 hours; total lab = 19.5 hours							
2018-2019	Fall	VPTH603	Core Parasitology	About 125	<i>Sarcocystis</i>	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases (2 h); sheep, goat, and camelid neurologic diseases (1 h)	3	
	Fall	VMED600	Introduction to Clinical Veterinary Medicine (ICVM)	About 125 (12 in lab)	Bovine handling and physical exam		3
	Spring	VCSN640	Large Animal Medicine	About 80	Equine neurologic diseases; equine neurologic examination	3	8
	Spring	VCSN648	Equine Sports Medicine	About 25	Lameness vs. neurologic disease; lab diagnostics for neurologic disease, cervical vertebral column evaluation; collapsing horse; case studies discussion	5	
	Spring	VMED602	ICVM III	About 125 (6 in lab)	Equine physical exam		1.5
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1	
	Spring	VMED618	ICVM IV	About 125 (7-	Equine physical exam		4

				8 in lab exam)	and procedures		
2018-2019							
total lecture =							
16 hours;							
total lab =							
16.5 hours							
2019-2020	Fall	VPTH603	Core Parasitology	About 125	Sarcocystis	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases (2 h); sheep, goat, and camelid neurologic diseases (1 h)	3	
	Fall	VMED600	Introduction to Clinical Veterinary Medicine (ICVM)	About 125 (12 in lab)	Equine handling and physical exam		1.5
	Spring	VCSN640	Large Animal Medicine	About 80	Equine neurologic diseases; equine neurologic examination	3	8
	Spring	VCSN648	Equine Sports Medicine	About 40	Lameness vs. neurologic disease; lab diagnostics for neurologic disease, cervical vertebral column evaluation	3	
	Spring	VMED602	ICVM III	About 125 (6 in lab)	Equine physical exam		1.5 (canceled due to COVID)
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1 (asynch)	
	Spring	VMED618	ICVM IV	About 125 (7-8 in lab exam)	Equine physical exam and procedures		4 (canceled due to COVID)
	Spring	zVET-CCR-001-2019B	Cyber Clinics 2019-2020	About 230	Equine neurologic principles, emergencies, and case workups	3 (live)	Created 1 virtual case (asynch, ~2hr)
2019-2020							

total lecture = 17 hours; total lab = 11.5 hours (5.5 hours canceled)							
2020-2021	Fall	VPTH603	Core Parasitology	About 125	Sarcocystis	1 (asynch)	2 'office hours' added due to COVID
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3 (asynch)	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases (2 h); sheep, goat, and camelid neurologic diseases (1 h); review (1 h)	4 (3 asynch, 1 live)	
	Spring	VCSN640	Large Animal Medicine	About 80	Equine neurologic diseases; equine neurologic examination	2 (live)	8
	Spring	VCSN648	Equine Sports Medicine	About 40	Equine degenerative myeloencephalopathy; lab diagnostics for neurologic disease, cervical vertebral column evaluation	3 (asynch)	
	Spring	VMED600	Introduction to Clinical Veterinary Medicine (ICVM)	About 125 (7 in lab)	Equine handling and physical exam		1.5
	Spring	VMED602	ICVM III	About 125 (6 in lab)	Equine physical exam		1.5
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus	1 (asynch)	
	Spring	VMED618	ICVM IV	About 125 (7-8 in lab)	Equine physical exam and procedures		3.5
	Both		NBC Patient Care Rotation	About 3	Teaching discussions (equine insurance, AAEP criteria for		11

					euthanasia)		
2020-2021							
total lecture =							
14 hours;							
total lab =							
27.5 hours							
2021-2022	Fall	VPTH603	Core Parasitology	About 125	Sarcocystis	1	
	Fall	VCSN632	Diseases and Management of Sheep and Goats	About 80	Neurologic diseases	3	
	Fall	VMED613	Medicine/Surgery III	About 125	Equine neurologic diseases (2 h); sheep, goat, and camelid neurologic diseases (1 h); bovine neurologic diseases (2 h)	5	
	Fall	VMED600	Introduction to Clinical Veterinary Medicine (ICVM)	About 125 (6 in lab)	Equine handling and physical exam		1.5
	Spring	VCSN640	Large Animal Medicine	About 90	Equine neurologic diseases; equine neurologic examination	3	8
	Spring	VCSN648	Equine Sports Medicine	About 40	Lab diagnostics for neurologic disease, cervical vertebral column evaluation, equine degenerative myeloencephalopathy	3	
	Spring	VMED602	ICVM III	About 125 (6 in lab)	Equine physical exam		1.5
	Spring	VMED609	Infectious and Metabolic Diseases	About 125	Botulism and tetanus; listeriosis, rabies	3	
	Spring	VMED618	ICVM IV	About 125 (7-8 in lab exam)	Equine physical exam and procedures		3.5
	Both		NBC Patient Care Rotation	About 3	Teaching discussions (equine insurance, AAEP criteria for euthanasia)		2
2021-2022							

total lecture = 18 hours; total lab = 16.5 hours							
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