

Large Animal Candidate Boot Camp  
October 12-15, 2023  
Michigan State University | East Lansing, MI



DAY 1 Thursday, October 12		
Time (Eastern Time)	Topic	Presenter(s)
7:30 am	Shuttle to MSU McPhail Center	
7:45-8:00 am	Registration	
8:00-8:10 am	Welcome & Introductions	Dr. Hal Schott
8:10-8:50 am	Thoracic and Abdominal Ultrasonography	Dr. Michelle Barton
8:50-9:30 am	Gastric and Colonic Ulcers	Dr. Richard Hepburn
9:30-9:50 am	Break	

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Time (Eastern Time)	Topic	Presenter(s)
9:50-10:40 am	Muscle Disorders – Examination	Dr. Stephanie Valberg
10:40-11:30 am	Muscle Disorders – Examination and Diagnostic Approach	Dr. Stephanie Valberg
11:30-12:20 pm	Neurologic Examination	Dr. Carrie Finno
12:20 – 1:00 pm	Lunch & Learn – Optimizing Ultrasound Imaging	Dr. Scott Giebler

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DAY 1 (continued) Thursday, October 12		
Time (Eastern Time)	Topic	Presenter(s)
1:00-3:00 pm	<b>Labs – 60 minutes each rotation</b> <b>Lab 1: Ultrasonography</b> <ul style="list-style-type: none"> <li>Perform an advanced ultrasonographic examination of the equine thorax and abdomen.</li> <li>Identify thoracic (lung, diaphragm) and abdominal (stomach, small and large intestine, liver, spleen, and kidneys) structures.</li> </ul> <b>Lab 2: Gastroscopy</b> <ul style="list-style-type: none"> <li>Identify normal anatomy of the equine stomach: antrum, pylorus, and proximal duodenum.</li> <li>Perform gastroscopy and duodenoscopy on a standing, sedated horse.</li> <li>Obtain gastric and/or duodenal biopsies on a standing, sedated horse.</li> </ul> <b>Lab 3: Muscular System Exam</b> <ul style="list-style-type: none"> <li>Perform an advanced examination of the equine muscular system.</li> <li>Identify muscles from which to collect biopsy samples and how to prepare samples for shipment.</li> </ul> <b>Lab 4: Neurologic Exam</b> <ul style="list-style-type: none"> <li>Perform an advanced examination of the equine neurologic system.</li> <li>Identify and localize neurologic abnormalities of patients with neurologic deficits.</li> </ul>	<i>Dr. Michelle Barton, Dr. Richard Hepburn, Dr. Stephanie Valberg, Dr. Carrie Finno</i>
3:00-3:30 pm	<b>Break</b>	

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DAY 1 (continued) Thursday, October 12		
Time (Eastern Time)	Topic	Presenter(s)
3:30-5:30 pm	Labs – 60 minutes each rotation Lab 1: Ultrasonography Lab 2: Gastrosocopy Lab 3: Muscular System Exam Lab 4: Neurologic Exam	Dr. Michelle Barton, Dr. Richard Hepburn, Dr. Stephanie Valberg, Dr. Carrie Finno
5:30-5:45 pm	Break	
5:45-6:30 pm	Tour of MSU Large Animal Veterinary Teaching Hospital	Dr. Hal Schott
6:30-8:30 pm	Dinner – Career Paths in Large Animal Internal Medicine	All
8:30 pm	Shuttle to Hotel	

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DAY 2 Friday, October 13		
Time (Eastern Time)	Topic	Presenter(s)
7:45 am	<b>Shuttle to MSU McPhail Center</b>	
8:00-8:40 am	<b>Liver – Evaluation and Biopsy</b>	<i>Dr. Michelle Barton</i>
8:40-9:20 am	<b>CVM Neurological Disorders</b>	<i>Dr. Richard Hepburn</i>
9:20-10:00 am	<b>C1C2/LS CSF Collection</b>	<i>Dr. Ana Moreira</i>

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DAY 2 (continued) Friday, October 13		
Time (Eastern Time)	Topic	Presenter(s)
10:00-10:20 am	<b>Break</b>	
10:20 am - 12:20 pm	<b>Labs – 60 minutes each rotation</b> <b>Lab 5: Liver Biopsy</b> <ul style="list-style-type: none"> <li>Identify landmarks for ultrasonographic imaging of the liver on the left and right sides of the abdomen.</li> <li>Perform a needle biopsy of the liver on the left and right sides of the abdomen in a standing, sedated horse.</li> </ul> <b>Lab 6: LS CSF Collection</b> <ul style="list-style-type: none"> <li>Know the materials needed for LS CSF collection in the horse.</li> <li>Identify the anatomical landmarks for performing a LS CSF collection.</li> <li>Perform LS CSF collection on a standing, sedated horse.</li> </ul> <b>Lab 7 Muscle Biopsy – Client Horses</b> <ul style="list-style-type: none"> <li>Identify the anatomical landmarks for performing gluteal and semimembranosus and sacrocaudalis dorsalis muscle biopsies.</li> <li>Perform muscle biopsies on clinical cases presented for the course.</li> <li>Perform muscle biopsies.</li> </ul> <b>Lab 8: C1/C2 CSF Collection</b> <ul style="list-style-type: none"> <li>Know the materials needed for C1/C2 CSF collection in the horse.</li> <li>Identify the anatomical landmarks for performing a C1/C2 CSF collection.</li> <li>Using ultrasonography, identify the site for performing a C1/C2 CSF collection.</li> <li>Perform C1/C2 CSF collection on a standing, sedated horse.</li> </ul>	<i>Dr. Michelle Barton, Dr. Richard Hepburn, Dr. Stephanie Valberg, Dr. Carrie Finno, Dr. Ana Moreira</i>

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DAY 2 (continued) Friday, October 13		
Time (Eastern Time)	Topic	Presenter(s)
12:20-1:00 pm	<b>Lunch</b>	
1:00-1:50 pm	<b>Non-CVM Neurological Disorders</b>	<i>Dr. Carrie Finno</i>
1:50-2:40 pm	<b>Vitamin E Related Disorders</b>	<i>Dr. Carrie Finno</i>
2:40-3:30 pm	<b>Unusual Gait Deficits – Neurologic or Not?</b>	<i>Dr. Stephanie Valberg</i>
3:30-3:50 pm	<b>Break</b>	

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DAY 2 (continued) Friday, October 13		
Time (Eastern Time)	Topic	Presenter(s)
3:50-5:50 pm	Labs – 60 minutes each rotation Lab 5: Liver Biopsy Lab 6: LS CSF Collection Lab 7: Muscle Biopsy Lab 8: C1/C2 CSF Collection	Dr. Michelle Barton, Dr. Richard Hepburn, Dr. Stephanie Valberg, Dr. Carrie Finno, Dr. Ana Moreira
5:50-6:00 pm	Break	
6:00-8:00 pm	Dinner – Discussion: Surviving a LAIM RTP	All
8:00 pm	Shuttle to Hotel	



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DAY 3 Saturday, October 14		
Time (Eastern Time)	Topic	Presenter(s)
7:45 am	<b>Shuttle to MSU McPhail Center</b>	
8:00-8:40 am	<b>Cervical Imaging Interpretation</b>	<i>Dr. Richard Hepburn</i>
8:40-9:20 am	<b>CSF Analysis and Interpretation</b>	<i>Dr. Ana Moreira</i>
9:20-10:00 am	<b>Urinary Tract Imaging</b>	<i>Dr. Hal Schott</i>
10:00-10:20 am	<b>Break</b>	

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DAY 3 (continued) Saturday, October 14		
Time (Eastern Time)	Topic	Presenter(s)
10:20 am - 12:20 pm	<p><b>Labs – 60 minutes each rotation</b></p> <p><b>Lab 8: C1/C2 CSF Collection</b></p> <ul style="list-style-type: none"> <li>Know the materials needed for C1/C2 CSF collection in the horse.</li> <li>Identify the anatomical landmarks for performing a C1/C2 CSF collection.</li> <li>Using ultrasonography, identify the site for performing a C1/C2 CSF collection.</li> <li>Perform C1/C2 CSF collection on a standing, sedated horse.</li> </ul> <p><b>Lab 9: Cervical Imaging</b></p> <ul style="list-style-type: none"> <li>Identify normal and abnormal radiographic findings in the cervical vertebral column of the horse.</li> <li>Perform measurements of cervical radiographs.</li> <li>Compare utility of cervical radiographs to CT cervical images, including myelographic studies.</li> </ul> <p><b>Lab 10: Cystoscopy</b></p> <ul style="list-style-type: none"> <li>Know the materials needed for urethroscopy and cystoscopy in the male horse.</li> <li>Obtain urine from the bladder of a male horse.</li> <li>Perform urethroscopy and cystoscopy in a gelding.</li> </ul> <p><b>Lab 11: Sacrocaudalis Muscle Biopsy</b></p> <ul style="list-style-type: none"> <li>Identify the anatomical landmarks for performing a sacrocaudalis dorsalis muscle biopsy.</li> <li>Perform muscle biopsies.</li> </ul>	<p><i>Dr. Ana Moreira, Dr. Richard Hepburn, Dr. Hal Schott, Dr. Lauren Bookbinder</i></p>
12:20-1:00 pm	<b>Lunch</b>	

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DAY 3 (continued) Saturday, October 14		
Time (Eastern Time)	Topic	Presenter(s)
1:00-1:40 pm	Enterocolitis and IBD	Dr. Richard Hepburn
1:40-2:20 pm	Upper Urinary Tract Disorders – AKI and CKD	Dr. Hal Schott
2:20-3:00 pm	Lower Urinary Tract Disorders	Dr. Hal Schott
3:00-3:30 pm	Break	
3:30-5:30 pm	Labs – 60 minutes each rotation Lab 8: C1/C2 CSF Collection Lab 9: Cervical Imaging Lab 10: Cystoscopy Lab 11: Sacrocaudalis Muscle Biopsy	Dr. Ana Moreira, Dr. Richard Hepburn, Dr. Hal Schott, Dr. Lauren Bookbinder
5:30-6:00 pm	Break	
6:00-11:00 pm	Shuttle to MSU Pavilion – Michigan Great Lakes International Draft Horse Show (dinner on own at MSU Pavilion)	

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DAY 4 Sunday, October 15		
Time (Eastern Time)	Topic	Presenter(s)
7:45 am	<b>Shuttle to MSU McPhail Center</b>	
8:00-8:30 am	<b>Myelography</b>	<i>Dr. Richard Hepburn</i>
8:30-9:00 am	<b>Alternatives to Pentobarbital Euthanasia</b>	<i>Dr. Lauren Bookbinder</i>
9:00-9:20 am	<b>Break</b>	
9:20-11:50 am	<b>Labs – All Attendees Participate</b> <b>Lab 12: Miscellaneous Procedures</b> <ul style="list-style-type: none"> <li>Perform AO CSF Collection/Myelogram Demonstration, IV Anesthesia, Intrathecal Lidocaine Euthanasia, IV KCl Euthanasia, Post-Mortem Renal Biopsy, Tracheotomy, Thoracotomy and Other Procedures</li> </ul>	<i>Dr. Richard Hepburn, Dr. Hal Schott, Dr. Lauren Bookbinder, Dr. Ana Moreira</i>
11:50-12:10	<b>Break</b>	
12:10-1:10 pm	<b>Lunch and Course Wrap Up</b>	