2023 IRIS Renal Week Laboratories

Tuesday, March 21, 2023	EXTRACORPOREAL LABORATORIES DAY 1	Location	Speaker
LAB SESSION 1			
1:30PM – 3:00PM	Lab 1: Demonstrated Principles of Hemodialysis	Vet Med II, Room 257	Dr. Sheri Ross
	Lab 2: Delivery of Slow Hemodialysis Treatments on an IHD Platform	Vet Med II, Room 257	Drs. Metzere Bierlein and Cesar Mayorga
	Lab 3A: Demonstration of Centrifugal-based Therapeutic Plasma Exchange and Plasma Adsorption on the TerumoBCT Optia™ Platform	Gladys Valley Hall, Room 1043	Dr. JD Foster
	Lab 3B: Demonstration of Centrifugal-based Therapeutic Plasma Exchange and Plasma Adsorption on the Fresenius-Kabi	Gladys Valley Hall, Room 1047	Dr. Cathy Langston and Fresenius-Kabi
	Lab 5: Demonstration of Hemodialysis and Hemoperfusion on the Baxter PrismMax Platform	Gladys Valley Hall, Room 1013	Drs. Dennis Woerde and Helen Philp
	Lab 7: Demonstration of Carbon Hemoperfusion on the Aimalojic Hemoperfusion Platform	Gladys Valley Hall, Room 1011	Jeff Barnes
	Lab 8: How to Prescribe Hemodialysis for the CRRT and IHD Platforms	Gladys Valley Hall, Room 2011	Dr. Cedric Dufayet
	Lab 9: Extracorporeal (Ultrasound-guided) Catheter Placement and Management	Gladys Valley Hall, Room 1030	Dr. Carrie Palm
	Lab 10: Clinical and Pathology Interpretation of the Kidney Biopsy	(Virtual) Gladys Valley Hall, Room 1041	Dr. Rachel Cianciolo
	Lab 11: Theory and Practice of Regional Citrate Anticoagulation	Gladys Valley Hall, Room 2013	Dr. Thierry Francey
	Lab 12: Demonstration of an Emergency Manual (Bridge) Dialysis System	Gladys Valley Hall, Room 2071A	Dr. Keith McCrea
	Lab 13: Ex vivo Demonstration of the Seraph 100 Affinity Blood Filter for Extracorporeal Adsorption of Circulating Pathogens	Gladys Valley Hall, Room 2071	Dr. Larry Cowgill and ExThera

2023 IRIS Renal Week Laboratories

Tuesday, March 21, 2023	EXTRACORPOREAL LABORATORIES DAY 1	Location	Speaker
LAB SESSION 2			
3:30PM – 5:00PM	Lab 1: Demonstrated Principles of Hemodialysis	Vet Med II, Room 257	Dr. Sheri Ross
	Lab 2: Delivery of Slow Hemodialysis Treatments on an IHD Platform	Vet Med II, Room 257	Drs. Metzere Bierlein and Cesar Mayorga
	Lab 3A: Demonstration of Centrifugal-based Therapeutic Plasma Exchange and Plasma Adsorption on the TerumoBCT Optia™ Platform	Gladys Valley Hall, Room 1043	Dr. JD Foster
	Lab 3B: Demonstration of Centrifugal-based Therapeutic Plasma Exchange and Plasma Adsorption on the Fresenius-Kabi	Gladys Valley Hall, Room 1047	Dr. Cathy Langston and Fresenius-Kabi
	Lab 5: Demonstration of Hemodialysis and Hemoperfusion on the Baxter PrismMax Platform	Gladys Valley Hall, Room 1013	Drs. Dennis Woerde and Helen Philp
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2023 IRIS Renal Week Laboratories

Wednesday, March 22, 2023	EXTRACORPOREAL LABORATORIES DAY 1	Location	Speaker
LAB SESSION 1			
1:30PM – 3:00PM	Lab 1: Demonstrated Principles of Hemodialysis	Vet Med II, Room 257	Dr. Sheri Ross
	Lab 2: Delivery of Slow Hemodialysis Treatments on an IHD Platform	Vet Med II, Room 257	Drs. Metzere Bierlein and Cesar Mayorga
	Lab 4A: Demonstration of Cytapheresis (CMNC) on the TerumoBCT Optia™ Platform	Gladys Valley Hall, Room 1043	Dr. JD Foster
	Lab 4B: Demonstration of Cytapheresis (MNC) on the Fresenius-Kabi Amicus Platform	Gladys Valley Hall, Room 1047	Dr. Cathy Langston and Fresenius-Kabi
	Lab 6: Demonstration of Membrane-based Therapeutic Plasma Exchange and Plasma Adsorption on the Baxter PrisMax Platform	Gladys Valley Hall, Room 1013	Dr. Dennis Woerde and Helen Philp
	Lab 7: Demonstration of Carbon Hemoperfusion on the Aimalojic Hemoperfusion Platform	Gladys Valley Hall, Room 1011	Jeff Barnes
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Lab Descriptions:

2023 IRIS Renal Week Laboratories

Lab 1: Demonstrated Principles of Hemodialysis—Dr. Sheri Ross
This traditional laboratory for Renal Week illustrates visually in real-time all the fundamental principles of hemodialysis and hemoperfusion including:

- Diffusion
- Convection
- Filtration equilibrium
- Differential solute diffusion
- Effects of blood flow
- Back filtration
- Compartmentation of solutes
- Effects of ultrafiltration and fluid administration
- Sorbent hemoperfusion

Lab 2: Delivery of Slow Hemodialysis Treatments on an Intermittent Hemodialysis (IHD) Platform—Drs. Metzere Bierlein and Cesar Mayorga
This laboratory offered for a third year demonstrates and compares 4 alternative techniques to deliver slow and prolonged (CRRT-like) treatments appropriate for severely uremic and small patients on an intermittent hemodialysis platform not designed for slow treatments. This laboratory is ideal for programs with only a single IHD platform and was a good hit at the past Renal Week.

Lab 3A: Demonstration of Centrifugal-based Therapeutic Plasma Exchange and Plasma Adsorption on the TerumoBCT Optia™ Platform—Dr. JD Foster
This laboratory will demonstrate the principles of centrifugal therapeutic plasma exchange (cTPE) and plasma absorption using the TerumoBCT Optia™. cTPE is an important emerging extracorporeal therapy in veterinary medicine for the management of a variety of immune-mediated diseases; and plasma absorption is used for poisonings not manageable by hemodialysis and has applications for a variety of other diseases including, severe inflammation, cancer, and myocardial infarction among others.

Lab 3B: Demonstration of Centrifugal-based Therapeutic Plasma Exchange and Plasma Adsorption on the Fresenius-Kabi Amicus Platform—Dr. Cathy Langston and Fresenius-Kabi
This laboratory will demonstrate the principles of centrifugal therapeutic plasma exchange (cTPE) and plasma absorption using the Fresenius-Kabi Amicus platform. cTPE is an important emerging extracorporeal therapy in veterinary medicine for the management of a variety of immune-mediated diseases; and plasma absorption is used for poisonings not manageable by hemodialysis and has applications for a variety of other diseases including cancer, severe inflammation, and myocardial infarction among others.

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Lab 4A: Demonstration of Cytapheresis (CMNC) on the TerumoBCT Optia™ Platform—Dr. JD Foster
This laboratory will demonstrate the principles of cytapheresis (collection/removal of specific cells from the flowing blood) using the TerumoBCT Optia™. Continuous mononuclear cell (CMNC) cytapheresis is an important component for emerging therapies including bone marrow transplantation, adoptive T-cell immune-therapies for cancer, and CAR-T therapies. The lab will illustrate how specific cell types can be selected from the flowing blood.

Lab 4B: Demonstration of Cytapheresis (MNC) on the Fresenius-Kabi Amicus Platform—Dr. Cathy Langston and Fresenius-Kabi—Dr. Cathy Langston and Fresenius-Kabi
This laboratory will demonstrate the principles of cytapheresis (collection/removal of specific cells from the flowing blood) using the Fresenius-Kabi Amicus. Mononuclear cell (MNC) cytapheresis is an important component for emerging therapies including bone marrow transplantation, adoptive T-cell immune-therapies for cancer, and CAR-T therapies. The lab will illustrate how specific cell types can be selected from the flowing blood.

Lab 5: Demonstration of Hemodialysis and Hemoperfusion on the Baxter PrismMax Platform—Drs. Dennis Woerde and Helen Philp
This laboratory is similar to Lab 1 except it illustrates visually in real-time the fundamental principles of hemodialysis, hemofiltration, and hemoperfusion on the Baxter PrisMax CRRT platform. The illustrated principles include:

- Diffusion
- Convection
- Adsorption
- Filtration equilibrium
- Hemodiafiltration
- Sorbent Hemoperfusion

Lab 6: Demonstration of Membrane-based Therapeutic Plasma Exchange and Plasma Adsorption on the Baxter PrisMax Platform
This laboratory will demonstrate the principles of membrane-based therapeutic plasma exchange (mTPE) and plasma adsorption using the Baxter Prismax CRRT platform. mTPE is an important growing extracorporeal therapy in veterinary medicine for the management of a variety of immune-mediated diseases and intoxications; and plasma absorption is an adjunctive therapy used to extend the efficacy of mTPE for poisonings not manageable by hemodialysis. It has applications for a variety of other diseases including cancer. The PrisMax CRRT platform is a being widely utilized by critical care and nephrology based extracorporeal programs for the utility of a

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single machine providing both hemodialysis and mTPE treatment capabilities. The Prismax is the newest generation CRRT machine replacing the PrismaFlex platform from Baxter.

Lab 7: Demonstration of Carbon Hemoperfusion on the Aimalojic Hemoperfusion Platform—Jeff Barnes
Hemoperfusion is an adsorptive extracorporeal technology used to clear the blood of abnormal solutes or toxins by adsorption from the flowing blood over a sorbent. Carbon is emerging as an effective and safe sorbent for veterinary hemoperfusion and is being used to manage a variety of life-threatening intoxications and poisonings. The lab will demonstrate the adsorptive properties of carbon on a new hemoperfusion platform designed for veterinary applications.

Lab 8: How to Prescribe Hemodialysis for the CRRT and IHD Platforms—Dr. Cedric Dufayet
This case-based laboratory will introduce attendees to a new perspective and method to prescribe and deliver hemodialysis for IHD or PIRRT treatments on either an IHD or CRRT platform. It demonstrates how to transitions from prescriptions based on blood processed strategies to prescriptions based on delivered clearance (Kt) which are readily delivered on either platform.

Lab 9: Extracorporeal (Ultrasound-guided) Catheter Placement and Management —Dr. Carrie Palm and Sean Naylor
This interactive laboratory will demonstrate ultrasound-guided techniques for catheter placement for extracorporeal therapies. Participants also will be able to practice catheter placement on realistic simulated patients. Proper suturing, securing, handling, locking, and bandaging techniques will also be discussed and illustrated.

Lab 10: Clinical and Pathology Interpretation of the Kidney Biopsy—Dr. Rachel Cianciolo
An accurate diagnosis of renal disease depends on the proper interpretation of the laboratory data and evaluation of a biopsy by a pathologist with expertise in nephropathology. Ideally renal biopsies are evaluated by light microscopy, transmission electron microscopy and immunofluorescence microscopy. The most accurate diagnosis of renal disease and glomerular disease is possible when clinicopathologic and imaging modalities are utilized in concert to decipher patterns of disease. Each individual pattern is composed of multiple elements (adaptations, lesions) that in aggregate determine the proper classification of the disease. It is this classification that allows the clinician to make the most accurate diagnosis and subsequent treatment plan.
This laboratory session will be provided virtually (although as good as in person) as Dr. Cianciolo was unable to be in person for Renal Week and will cover the anatomic pathological changes that occur in the glomerular and tubulointerstitial compartments. It will focus on identifying the individual morphological elements that are present in the common patterns of renal disease with focus on the dog. Laboratory data and histomorphic, ultrastructural and immunofluorescence images will be used to illustrate these common patterns. Emphasis will also be put on describing the mechanisms by which lesions develop. The session will be an interactive lecture format. At the end of the session the attendees should have an understanding of the elements that comprise the most common patterns of glomerular and tubulointerstitial disease and of the mechanisms by which they occur.

Lab 11: Theory and Practice of Regional Citrate Anticoagulation—Dr. Thierry Francey

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Regional citrate anticoagulation is an important option for the safe delivery of extracorporeal therapies in patients at risk of bleeding. Many extracorporeal platforms, however, do not incorporate this option into their operating software, and this therapy must be delivered manually. Dr. Thierry Francey has perfected this technique for veterinary applications and provides the "why" and "how" to provide regional citrate in your extracorporeal program.

Lab 12: Demonstration of an Emergency Manual (Bridge) Dialysis System-Drs. Keith McCrea and Jonathan Chow
In catastrophic or under austere emergency circumstances, access to traditional extracorporeal centers may be compromised, or the actual center may be temporarily offline (power failure, earthquake, flood, etc.) and unable to provide emergent extracorporeal therapies. Under these conditions a manual extracorporeal system may serve as a life-saving emergency bridge until conventional treatments become available. This laboratory demonstrates a manual dialysis system that can quickly and effectively deliver extracorporeal therapies for such emergency circumstances or in settings where conventional extracorporeal therapies are not available.

Lab 13: Ex vivo Demonstration of the Seraph 100 Affinity Blood Filter for Extracorporeal Adsorption of Circulating Pathogens -Dr. Larry Cowgill and Exthera Medical
This session introduces and demonstrates a breakthrough advance in extracorporeal adsorptive therapies for the broad-spectrum elimination of circulating viral or bacterial pathogens with the ExThera Medical Seraph 100 affinity blood filter.