<table>
<thead>
<tr>
<th>Monday, March 14, 2016</th>
<th>Boot Camp</th>
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</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>Gladys Valley Hall, Room 1047 and Dialysis Room</td>
</tr>
</tbody>
</table>
| 8:00 am – 9:00 am | Registration and Continental Breakfast  
Introduction to Boot Camp, Dr. Cathy Langston |
| 9:00 am – 9:50 am | Principles and Indications for ERRT, PreDialysis Management  
Drs. Larry Cowgill and JD Foster |
| 10:00 am – 10:50 am | Vascular Access, Anticoagulation  
Drs. JD Foster and Cathy Langston |
| 11:00 am – 11:50 am | Dialyzers & Dialysate, Prescriptions for IHD/CRRT/PIRRT/SLED  
Drs. Larry Cowgill and Cathy Langston |
| 12:00 pm – 1:00 pm | Lunch |
| Labs | Vet Med II, Room 257 |
| 1:00 pm – 5:00 pm | Lab  
Drs. Larry Cowgill, JD Foster, Cathy Langston and Carrie Palm |

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<th>Tuesday, March 15, 2016</th>
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<td>Lectures</td>
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<tr>
<td>8:00 am – 9:00 am</td>
<td>Continental Breakfast</td>
</tr>
</tbody>
</table>
| 9:00 am – 9:50 am | Complications, Stopping ERRT  
Dr. Larry Cowgill |
| 10:00 am – 10:50 am | Catheter Performance, Adequacy and Outcomes  
Drs. Larry Cowgill and Cathy Langston |
| 11:00 am – 11:50 am | Water Treatment, Special Problems, Other Therapies  
Drs. JD Foster and Cathy Langston |
| 12:00 pm – 1:00 pm | Lunch |
| Labs | Vet Med II, Room 257 |
| 1:00 pm – 5:00 pm | Lab  
Drs. Larry Cowgill, JD Foster, Cathy Langston and Carrie Palm |

**Boot Camp Labs**

Attendees will be divided into groups and rotated through the laboratory sessions over the 2 days. The laboratory sessions will demonstrate and permit hands-on interaction in the setup and operational controls of the Phoenix IHD and the PrismaFlex CRRT hemodialysis platforms. The laboratories also will demonstrate some of the basic principles of diffusive, convective, and adsorptive solute removal.
### Renal Week
#### March 14-19, 2016, UC Davis

**Wednesday, March 16, 2016**  

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:30 am – 8:30 am</td>
<td>Registration and Continental Breakfast</td>
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</tbody>
</table>
| 8:30 am – 9:00 am | Welcome  
Dr. Larry Cowgill                                                   |
| 9:00 am – 9:30 am | Who are the Current Players in Phosphate Homeostasis  
Dr. Jonathan Elliott                                                 |
| 9:30 am – 10:00 am | What is Klotho?  
Dr. Valerie Parker                                                   |
| 10:00 am – 10:30 am | Feline Calcium Sensing Receptor  
Dr. Rebecca Geddes                                                    |
| 9:00 am – 9:30 am | Phosphate Balance and Diet – Do the Gut and Kidney Communicate?  
Dr. Robert Unwin                                                      |
| 11:35 am – 12:05 pm | New Insights into Bone Disease in Dogs and Cats with CKD  
Drs. Gilad Segev and Anna Shipov via video conference                |
| 12:05 pm – 1:30 pm | Current and Future Options to Manage Bone/Mineral Disorders in CKD  
Dr. JD Foster                                                         |
| 1:30 pm – 2:10 pm | Novel Kidney Biomarkers – Their Discovery and Future  
Dr. Murthy Yerramilli                                                  |
| 2:10 pm – 2:45 pm | Update on the Use of SDMA in the Diagnosis of Kidney Disease  
Dr. David Polzin                                                     |
| 2:45 pm – 3:15 pm | Poster/Abstract Opportunities                                         |
| 3:15 pm – 3:35 pm | Break                                                                  |
| 3:35 pm – 4:05 pm | Outcomes from the 2015 IRIS Napa Meeting  
Dr. David Polzin                                                     |
| 4:05 pm – 4:35 pm | Application of Novel Biomarkers in Urinary Tract Infection  
Dr. Larry Cowgill                                                    |
| 4:35 pm – 5:05 pm | Poster/Abstract Opportunities                                         |
| 5:30 pm – 6:30 pm | Mondavi Wine Sensory Class  
Extra ticketed event at the RMI Institute                            |
| 7:00 pm – 9:00 pm | Dinner  
Included for whole group at Gladys Valley Hall                      |
<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
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<tbody>
<tr>
<td>7:45 am – 8:45 am</td>
<td>Continental Breakfast</td>
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<tr>
<td>8:45 am – 9:00 am</td>
<td>Welcome</td>
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<tr>
<td></td>
<td>Drs. Larry Cowgill and Cathy Langston</td>
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<tr>
<td>9:00 am – 9:45 am</td>
<td>CardioRenal Syndrome – The Human Perspective</td>
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<td>Dr. Dan Negoianu via video conference</td>
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<tr>
<td>9:45 am – 10:15 am</td>
<td>CardioRenal Syndrome – The Veterinary Perspective</td>
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<td>Dr. Shelly Vaden</td>
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<tr>
<td>10:15 am – 10:45 am</td>
<td>How is the Heart Impacted by Kidney Disease</td>
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<td>Dr. Joao Orvalho</td>
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<tr>
<td>10:45 am – 11:00 am</td>
<td>Break</td>
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<tr>
<td>11:00 am – 11:30 am</td>
<td>How is the Kidney Impacted by Heart Disease</td>
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<td></td>
<td>Dr. Larry Cowgill</td>
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<tr>
<td>11:30 am – 12:00 pm</td>
<td>Balancing the Heart and Kidney in the ICU – The Criticalist Perspective</td>
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<td>Dr. Andre Shih</td>
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<tr>
<td>12:00 pm – 12:30 pm</td>
<td>How Should Current Practice Patterns Change?</td>
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<td></td>
<td>Drs. Larry Cowgill and Joao Orvalho</td>
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<tr>
<td>12:30 pm – 1:30 pm</td>
<td>Lunch</td>
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<tr>
<td>1:30 pm – 2:15 pm</td>
<td>Validation of the AKI Scoring System</td>
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<td>Dr. Cathy Langston</td>
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<td>2:15 pm – 2:45 pm</td>
<td>How Can We Tell if CKD is Progressing</td>
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<td></td>
<td>Dr. David Polzin</td>
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<tr>
<td>2:45 pm – 3:15 pm</td>
<td>Is Pre-renal Azotemia an AKI?</td>
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<td>Dr. Sheri Ross</td>
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<tr>
<td>3:15 pm – 3:35 pm</td>
<td>Break</td>
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<tr>
<td>3:35 pm – 4:20 pm</td>
<td>Early Current and Emerging Blood Purification - 100 Years of Advances</td>
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<td></td>
<td>Dr. David Ward</td>
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<td>4:20 pm – 4:50 pm</td>
<td>USE of TPE as a Primary Therapy for IMHA</td>
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<td>Dr. Carrie Palm</td>
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<td>4:50 pm – 5:35 pm</td>
<td>Current State of the Art of Human Therapeutic Apheresis and Future Directions</td>
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<td>Dr. David Ward</td>
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<tr>
<td>Friday, March 18, 2016</td>
<td>Renal Week</td>
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<tr>
<td><strong>Labs</strong></td>
<td>Various Locations</td>
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<td>All labs will rotate every two hours from 8:00 am – 5:00 pm</td>
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</tbody>
</table>
| 7:00 am – 8:00 am     | Continental Breakfast  
Gladys Valley Hall Lobby |
| 8:00 am – 10:00 am   | Lab 1: Illustrated Principles of Hemodialysis  
Vet Med II, Room 257  
John Kirby and Michael Naylor |
| 10:00 am – 12:00 pm  | Lab 2: Delivery of Slow Hemodialysis Treatments  
Vet Med II, Room 257  
Dr. Larry Cowgill |
| 1:00 pm – 3:00 pm    | Lab 3: Optia Therapeutic Plasma Exchange Demonstration  
Vet Med II, Room 257  
Dr. JD Foster |
| 3:00 pm – 5:00 pm    | Lab 4: Advanced Monitoring Techniques for Hemodialysis and Demonstration of Fluid Volume (ECF, ICF, TBW) Regulation during Hemodialysis  
Vet Med II, Room 257 |
| 8:00 am – 10:00 am   | Lab 5: Demonstration of CRRT with PrismaFlex combined with  
Lab 7: How to Write a Hemodialysis Prescription for the CRRT Platform  
Gladys Valley Hall, Room 1047  
Dr. Cathy Langston |
| 10:00 am – 12:00 pm  | Lab 6: How to Write a Hemodialysis Prescription for the IHD Platform  
Gladys Valley Hall, Room 1043  
Dr. Carrie Palm |
| 1:00 pm – 3:00 pm    | Lab 8: Pathology Interpretation of the Kidney Biopsy  
Gladys Valley Hall 1041  
Dr. Chuck Mohr |
Lab 1: Illustrated Principles of Hemodialysis
This traditional lab for Renal Week illustrates visually in real-time all the fundamental principles of hemodialysis including:

- Diffusion
- Convection
- Filtration equilibrium
- Differential solute diffusion
- Effects of blood flow
- Back filtration
- Compartmentation of solutes

Lab 2: Delivery of Slow Hemodialysis Treatments on an Intermittent Hemodialysis Platform
This laboratory will demonstrate and compare 4 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. The kinetic performance for each technique will be demonstrated sequentially in real-time.

This laboratory will also demonstrate the MEDICA Vetsmart dialysis machine, a convective-based platform designed for small patients.

Lab 3: Optia Apheresis Demonstration
This laboratory will demonstrate the principles of therapeutic plasma exchange (TPE) and plasma absorption using the TerumoBCT Optia. TPE 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 is being investigated for management of cancer.

Lab 4: Advanced Hemodialysis Monitoring Techniques and Demonstration of Fluid Volume (ECF, ICF, TBW) Regulation during Hemodialysis
In this laboratory we shall demonstrate advanced hemodialysis monitoring techniques which include:

- Assessment of fiber bundle volume as a measure of dialyzer performance and clotting.
- Ionic dialysance as a measure of dialyzer performance and clotting
- Assessment of access recirculation
- On-line blood volume monitoring
- Effects of volume expansion on ECF ICF, and TBW
- Effects of ultrafiltration on ECF, ICF, and TBW
- Effects of high-to-low sodium modeling on ECF, ICF, and TBW
- Effects of low-to-high sodium modeling on ECF, ICF, and ICF
- Demonstration of dialysis disequilibrium on ICF
- Demonstration of reversal of ICF disequilibrium with mannitol

Lab 5: Demonstration of CRRT with PrismaFlex (combined with Lab 8)
This laboratory session will provide an interactive, small group demonstration of the setup, functional interface, options, and operation of the PrismaFlex CRRT dialysis delivery system. The attendee will go away with an overview of this technology and its applicability for a new or existing dialysis program.
Lab 6: How to Write a Hemodialysis Prescription for the IHD Platform
With a case-based approach, this laboratory will provide the attendee with an understanding of the complexity, medical decision making, and technical options required to formulate a hemodialysis prescription on a standard intermittent hemodialysis (IHD) platform. The lab will encourage interactive discussion and emphasized veterinary perspectives and alternative approaches.

Lab 7: How to Write a Hemodialysis Prescription for the CRRT Platform (combined with Lab 6)
With a case-based approach, this laboratory will provide the attendee with an understanding of the complexity, medical decision making, and technical options required to formulate a hemodialysis prescription on a continuous renal replacement therapy (CRRT) platform. The lab will encourage interactive discussion and emphasized the uniqueness an CRRT procedures for veterinary therapeutics.

Lab 8: Pathology interpretation of the kidney biopsy
An accurate diagnosis of renal disease depends on the 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 in particular is possible when these three 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 a more accurate diagnosis and subsequent treatment plan.

This laboratory session will cover the adaptive and pathological changes that occur primarily in glomerular diseases and also in diseases of the tubulointerstitial compartment. It will focus on identifying the individual morphological elements that are present in the common patterns of renal disease with focus on the dog. 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 in lecture format; although, it will be interactive with group participation encouraged. Multiple sessions will be given throughout the day. 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.
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<td>Continental Breakfast</td>
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<td>9:00 am – 9:30 am</td>
<td>Delivery of Slow Treatments on the Intermittent Hemodialysis Platform</td>
<td>Dr. Larry Cowgill</td>
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<tr>
<td>9:30 am – 10:00 am</td>
<td>Introduction of MEDICA Vetsmart Machine for Veterinary Hemodialysis</td>
<td>Dr. Ilaria Lippi</td>
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<tr>
<td>10:00 am – 10:45 am</td>
<td>Plasma Adsorption for Cancer</td>
<td>Dr. JD Foster</td>
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<tr>
<td>10:45 am – 11:00 am</td>
<td>Break</td>
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<tr>
<td>11:00 am – 11:15 am</td>
<td>Overview of the UC Davis Hemodialysis Academy</td>
<td>Dr. Larry Cowgill</td>
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<tr>
<td>11:15 am – 11:45 am</td>
<td>Abstract or Additional Topic</td>
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<tr>
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<tr>
<td>12:15 pm – 12:30 pm</td>
<td>Closing Remarks</td>
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<tr>
<td>1:00 pm – 6:00 pm</td>
<td>Interventional Approach to Obstructed Canine and Feline</td>
<td>Drs. William Culp and Carrie Palm</td>
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Lab: Interventional Approach to Obstructed Canine and Feline
This afternoon laboratory features a lecture and wet laboratory focused on the management of ureteral obstructions in dogs and cat. The lecture will discuss topics such as antegrade ureteral stenting, subcutaneous ureteral bypass, and cystoscopic ureteral stent placement. The laboratory will have 2 major stations which will allow participants to use the equipment and techniques described previously in feline and canine cadavers.