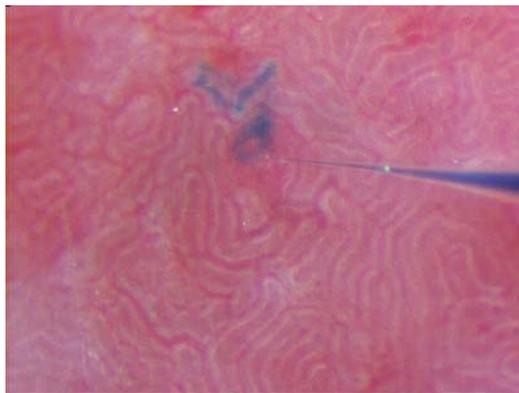


## 2. UAB-UCSD O'BRIEN CENTER RODENT KIDNEY PHYSIOLOGY/ INJURY WORKSHOP

April 9-13, 2012

Four ½ Day Training Course  
for Physiologists, Pharmacologists and  
Nephrologists

Renal Division, UC San Diego and  
VA Medical Healthcare System San Diego  
Division of Nephrology, University of  
Alabama at Birmingham  
Fees: \$850 (\$1700 for industry)



Presented by the

UAB-UCSD O'Brien Core Center for Acute  
Kidney Injury Research (DK079337)



The workshop is a hands-on course designed to introduce and practice animal handling and phenotyping techniques for commonly used methods in the rat and mouse. Experienced experts will teach basic animal handling, injections, urine and blood sampling, assessment of blood pressure (Day 1), renal hemodynamics and transport on the whole kidney level (Day 2) as well as on the single nephron level (Day 3) and in models of kidney injury (Days 4). The format includes lectures, demonstrations and hands-on practical training and is open to graduate students, postdoctoral fellows, residents, research assistants, junior faculty and other laboratory personnel.

The aim of the workshop is to make participants familiar with practical procedures to characterize renal function in rodents (rats and mice).

### PROGRAM

#### Day 1 Introduction and Basic Procedures

Instructors: Bray, Charbono, Rieg, Vallon

##### Introductory Lectures

8-9:45am Handling of rats and mice, laws and regulations

##### Practical Sessions

10am-5:15pm a) Basic handling of rats and mice, isoflurane anesthesia, injections (IP, SC, tail vein and retro-orbital), drawing blood, oral gavage, and tail and ear biopsies; b) Metabolic cage studies in mice; c) Blood pressure by tail cuff in rats.

#### Day 2 Whole Kidney Function

Instructors: Rieg, Singh, Thomson, Vallon

##### Introductory Lectures

8-8:25am Assessment of glomerular filtration rate (GFR) (incl. clearance studies)

8:25-8:50am Assessment of GFR by FITC inulin kinetics

9-9:25am Assessment of renal plasma flow (RPF) (incl. renal clearance and flow probe)

9:25-9:50am Assessment of renal transport

#### Practical Sessions

10am-5:15pm a) GFR by FITC inulin kinetics in mice; b) Arterial blood pressure, renal clearance experiment and flow probe in rats; c) Urine and plasma analysis.

#### Day 3 Single Nephron Function

Instructors: Blantz, Thomson, Rieg, Singh, Vallon

##### Data analysis session

8-8:55am Analysis of data from a) FITC-inulin study and b) Metabolic cage

9-9:55am Analysis of renal clearance studies and blood flow measurements

##### Introductory Lectures

10-10:40am Determinants of single nephron GFR and their measurement

10:45-11:20am Tubuloglomerular feedback

11:25am-12 noon Assessment of renal transport by micropuncture

##### Practical Sessions

1-5:15pm a) Rat preparation for micropuncture and pipette making; b) Rat renal micropuncture and microanalysis.

#### Day 4 Models of Kidney Injury

Instructors: Agarwal, Dominguez, Sanders, Singh, Thomson

##### Introductory Lectures

8-8:40am Models of acute kidney injury (AKI)

8:45-9:05am Cecal ligation and puncture model of AKI

9:10-9:50am Models of chronic kidney disease (CKD)

##### Practical Sessions

10am-5:15pm a) Ischemia-reperfusion injury in the rat; b) Unilateral nephrectomy and subtotal nephrectomy in the rat; c) Cecal ligation and puncture in the mouse.

#### Day 5 Review and Discussion

Instructors: all faculty

8-10:30am Questions and answers.

## WORKSHOP INSTRUCTORS

### Lecturers and Instructors from UCSD and VA Medical Center

**Roland C. Blantz, M.D., Professor and Chair of Nephrology:** Research interests include glomerular hemodynamics, tubuloglomerular feedback, in vivo and in vitro assessment of whole kidney and tubular/glomerular oxygen consumption.

**Mari Bray D.V.M., DACLAM, Veterinary Medical Officer:** Dr. Bray is a laboratory animal veterinarian with interests in all aspects of laboratory animal care and use, including design of research models using humane methods.

**Timo Rieg M.D., Assistant Professor of Medicine:** Research interests include regulation of renal function and blood pressure. Experienced in assessment of kidney function and blood pressure in awake and anesthetized mice.

**Prabhleen Singh M.D., Assistant Professor of Medicine:** Dr Singh is interested in the pathophysiology of early chronic kidney disease and the early hemodynamic and metabolic alterations in models of kidney disease on the single nephron and whole kidney level.

**Scott Thomson M.D., Professor of Medicine:** Dr. Thomson conducts research into the autoregulation of renal function with particular emphasis on tubuloglomerular feedback.

**Volker Vallon M.D., Professor of Medicine and Pharmacology:** Research interests include molecular determinants of renal transport mechanisms, blood pressure regulation, and the pathophysiology of the early diabetic kidney.

### Guest Lecturers and Instructors

**Wilfred (Buddy) Charbono, Compliance and Training Manager, Sanford-Burnham Medical Research Institute:** Buddy Charbono has over 20 years experience working with mice and rats, and he runs several wet labs for employees each year.

**Jessica Dominguez Ph.D. Assistant Professor of Anesthesiology and Physiology & Biophysics, University of Colorado Anschutz Medical Campus, Aurora, CO:** Dr Dominguez' research is focused on evaluating the mechanisms behind epidermal growth factor- and probiotic-mediated intestinal protection in murine models of both pediatric and adult sepsis.

### Lecturers and Instructors from UAB

**Anupam Agarwal, M.D., Director, UAB Division of Nephrology and UAB-UCSD O'Brien Core Center:** Research interests focus on pathophysiology of acute kidney injury in animal models using in vivo and in vitro techniques. Animal models include renal I/R, sepsis, nephrotoxins and renal transplantation in mice.

**Paul Sanders, M.D., Professor of Medicine, Core Director, Resource for Pre-clinical Studies of the O'Brien Center:** Research interests include acute renal tubular injury from light chains, multiple myeloma, salt sensitive hypertension and cell signaling.

## REGISTRATION

The workshop is being held at the  
**VA San Diego Healthcare Center**

**Registration Deadline – February 9, 2012**

Course Fees: \$850 (\$1,700 for industry)  
The registration includes course materials, lunches, coffee, 1 evening meal.

First Name \_\_\_\_\_  
Last Name \_\_\_\_\_  
Institution \_\_\_\_\_  
Department \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_  
Phone \_\_\_\_\_  
Fax \_\_\_\_\_  
E-mail \_\_\_\_\_

Please submit registration form and your biosketch with a brief paragraph on experience and career goals by mail, fax or e-mail to

John Reeves  
O'Brien Center Workshop Coordinator  
Mailcode 9111-H, 3350 La Jolla Village Drive  
San Diego, CA 92161-0002  
E-mail: jreeves@ucsd.edu  
Phone: 858-552-7528  
Fax: 858-552-7549

The coordinator, John Reeves, will then communicate details about the payment, which is required to reserve your participation in the workshop.

### **Accommodations and Travel**

Participants are responsible for their own travel and housing arrangements. John Reeves, O'Brien Center Workshop Coordinator, will provide assistance (contact info see above).

**Only 9 spaces available for this workshop. Please register early.**

**Looking forward seeing you in San Diego**

