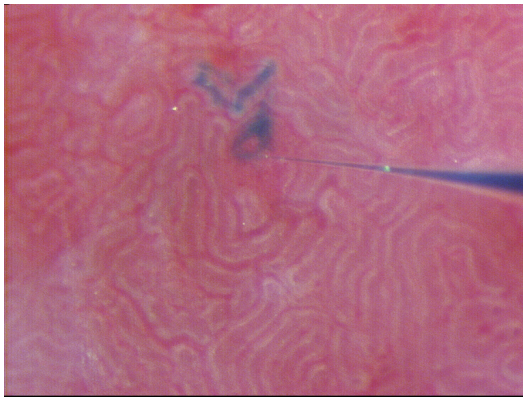
8th UAB-UCSD O'BRIEN CENTER RODENT KIDNEY PHYSIOLOGY/ INJURY WORKSHOP

April 16-20, 2018

A Four and ½ Day Training Course for Physiologists, Pharmacologists, and Nephrologists

Sponsored by the
Division of Nephrology at the
University of California, San Diego, the
Veterans Affairs San Diego Healthcare System,
and the
Division of Nephrology at the
University of Alabama at Birmingham

Registration Fee: $900.00 USD
($1800.00 USD for industry)



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

This workshop is a hands-on course designed to familiarize the participant to the practices of animal handling and phenotyping techniques that are commonly used when working with the rat and mouse. Our experts will teach the basics of 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 research assistants, graduate students, postdoctoral fellows, residents, scientists and faculty from academia/industry.

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

PROGRAM AT A GLANCE

Each day begins with an introduction to the concepts and procedures through lectures from our experts. Subsequently, the participants are separated into groups of three to promote a more individualized learning experience during the practical sessions.

Day 1 Introduction and Basic Procedures

Instructors: Bray, Charbono, Fu, Ma, Patel, Vallon

Introductory Lectures

8:00 AM - 9:45 AM: Handling of rats and mice, laws and regulations

Practical Sessions

10:00 AM - 5:15 PM: 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 mice.

Day 2 Whole Kidney Function

Instructors: Fu, Patel, Singh, Thomson, Vallon

Introductory Lectures

8:00 AM - 8:25 AM: Assessment of glomerular filtration rate (GFR) (incl. clearance studies)

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

9:00 AM - 9:25 AM: Assessment of renal plasma flow (RPF). Includes renal clearance and flow probe.

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

Practical Sessions

10:00 AM - 5:15 PM: 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: Patel, Thomson, Singh, Vallon

Data analysis session

8:00 AM - 8:55 AM: Analysis of data from a) FITC-inulin study and b) Metabolic cage

9:00 AM - 9:55 AM: Analysis of renal clearance studies and blood flow measurements

Introductory Lectures

10:00 AM - 10:40 AM: Determinants of single nephron GFR and their measurement

10:45 AM - 11:20 AM: Tubuloglomerular feedback

11:25 AM – 12:00 PM: Assessment of renal transport by micropuncture

Practical Sessions

1:00 PM - 5:15 PM: a) Rat preparation for micropuncture and pipette making; b) Rat renal micropuncture and microanalysis.

Day 4 Models of Kidney Injury

Instructors: Agarwal, Sanders, Singh, Thomson

Introductory Lectures

8:00 AM - 8:40 AM: Models of acute kidney injury (AKI)

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

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

Practical Sessions

10:00 AM - 5:15 PM: 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

8:00 AM -10:30 AM: Questions and answers.

WORKSHOP INSTRUCTORS

University of California San Diego and VA Medical Center Lecturers and Instructors

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.

Yiling Fu, M.D. Ph.D., Research Scientist: Studies renal physiology/pathophysiology using rat models and gene-targeted mice.

Rohit Patel, MS, Research Associate: Highly experienced with handling of rats and mice and the performance of metabolic cage studies, FITC-sinistrin GFR assessment, microsurgery, renal clearance and blood flow measurements, measurement of chloride in nanoliter samples.

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.

Gina Ma BS, RVT, RLATG; Senior Research Associate, PharmAkea Therapeutics: Gina Ma is highly experienced using rodents and various other lab animal species in the research/pharma/biotech industry. She also teaches Veterinary Anatomy and Physiology at the San Diego Mesa College.

University of Alabama at Birmingham Lecturers and Instructors

Anupam Agarwal, M.D., Director, Division of Nephrology and UAB-UCSD O'Brien Core Center Director: 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.

WORKSHOP LOCATION

The location for this workshop will be the VA San Diego Healthcare Hospital.

O'Brien Center Workshop Director:
Dr. Volker Vallon (vvallon@ucsd.edu)

O'Brien Center Workshop Coordinator:
Ruben Figueroa (r2figueroa@ucsd.edu)

REGISTRATION

Your registration fee ($900.00 USD for academic, $1800.00 USD for industry) includes all course material in a binder, continental breakfasts, lunches, and one evening meal commemorating the workshop. All participants will leave with a CD containing the entire workshop lectures, worksheets, contact information on instructors. Lab coats will be provided for your use.

Please submit
Last Name:
Institution:
Department:
Mailing Address:
Phone Number:
Fax Number:
E-mail Address:

Submit completed registration form information, your biosketch, and a brief paragraph on your career goals by e-mail to:

Ruben Figueroa
O'Brien Center Workshop Coordinator
Nephrology-Hypertension
UC San Diego Health
200 West Arbor Drive, # 8409
San Diego, CA 92103-8907
T: 619-471-0753
Email: r2figueroa@ucsd.edu
and cc to Dr. Vallon (vvallon@ucsd.edu)

Once your application and accompanying materials are received, you will be furnished details for submitting your registration fee.

Please Note: Your participation in this workshop is not guaranteed until registration fees are received by us.

Accommodations and Travel
Participants are responsible for their own travel and housing arrangements. Teresa White, O'Brien Center Workshop Coordinator, will provide assistance (See above for contact information).

There are *only* nine slots available for this workshop, please register early!

We are looking forward to seeing you in San Diego!

PREVIOUS PARTICIPANTS

Previous participants include graduate students, postdocs, research assistants, research associates, scientists, and faculty from 41 institutions from 9 countries.
Some comments from recent workshop participants: "course was well organized with very knowledgeable instructors and highly skilled technicians"; "instructors were extremely helpful and patient in explaining each technique"; "extremely hands-on experience allowing for full understanding of the subject matter"; "there was ample time in each lab session to both get the hands-on experience and discuss theory pertaining to the experiment"; "there is a nice balance of theoretical and practical content"; "the small groups were very amenable to close contact and feedback with the instructors as well as making new relationships"; "you get to see it's not so difficult as it sounds"; "for the FITC sinistrin it was nice to see how simple and efficient assessing GFR is"; "I did not have any surgery skills prior to this workshop and by the end I not only see the need for having this skill but also I am now very interested in including whole body physiological experiments in my future studies"; "the micropuncture experiments were so exciting"; "assistance/education in both practical aspects of experiments as well as analysis"; "this course reignited my passion for research and at the same time provided me new techniques & perspectives to ask new and different questions relating to my work"; "I strongly recommend this course. It caused a huge jump in my understanding as well as my interest in this field".