



**The 29th Annual Meeting
of the
Academy of Surgical Research
September 26 - 28, 2013
Clearwater Beach, FL**

Surgical Research...the bridge from innovation to patient

Program Highlights:

- **Planned keynote speakers:**
 - **Wayne McIlwraith, BVSc, PhD, DSc, FRCVS, DACVS:** *Evolution of arthroscopic surgery with the management of arthroscopic surgery as a clinical tool in the horse and the development of equine models for surgical repair of cartilage defects*
 - **Gloria Matthews, DVM, PhD, DACVS:** *Translational models for orthopedic research*
 - **Richard W. Bianco:** *Four decades of using large animals to assess human safety of heart valves and other Class III devices*
 - **John Belluardo:** *A patient's perspective of how surgical research has built the bridge for his healthy outcome*
- **Planned Topics:**
 - Orthopedic surgical models
 - Stem cell technology
 - Nanotechnology
 - Transplantation & Immunology
 - Refinement, Replacement and Reduction Innovations
 - Technical and Surgical "Savvy" (share interesting data or implementation ideas)
 - Biomedical Ethics & Welfare
 - Non-invasive monitoring
 - Non-Human Primates & Diabetes
 - Anesthesia and Pain Management
 - General Surgery & Suturing
 - Disease Specific Surgical Model Development
 - Pre and Post-Operative Care
 - Microsurgery

Wet Labs

Workshop #1

Surgical anatomy and techniques for PLF, PLIF and vertebral body plating and pedicle screw implantation in sheep.

The surgical anatomy and techniques to study the safety and efficacy of osteoinductive and osteoconductive materials within vertebral body spacers [posterolateral intervertebral body fusion (PLIF)] or as a conventional posterolateral vertebral fusion (PLF) will be demonstrated in cadaver sheep and goat spines. Participants will be shown the necessity of essential instrumentation, as well as to how to avoid the numerous possible pitfalls and complications in this procedure.

4 people maximum

Workshop #2

Renal Disease Model in the Rat and Mouse

The goal of this hands-on workshop will be to demonstrate and train participants on creating a surgically induced renal failure model in rodents. The workshop will include performing two different versions of a subtotal nephrectomy procedure. One will be done in mice and the other in rats. Participants will also gain knowledge about the background of the procedure, pre and post-operative care and surgical techniques.

12 people maximum

Workshop #3

Non-invasive Monitoring Techniques for the Conscious and Unconscious Animal

How to Record ECG in [Conscious] Mice Non-invasively at Baseline, During Anesthesia, and During Recovery (2 hours)

The electrocardiogram can provide a wealth of information about a mouse, including its health status, depth of anesthesia, and extent of pain. This workshop will illustrate for researchers the speed and ease of recording the ECG, even from newborn mice. Attendees will learn how changes in heart rate and heart rate variability may be used as markers of depth of anesthesia, and how certain types of pain can be reflected via the ECG. Data from interesting developmental disorders, such as spinal muscular atrophy, will be presented. Participants will take with them data sets from ECGs they record non-invasively in conscious mice.

Non-Invasive monitoring of the vital signs of mice and rats undergoing anesthesia: Enhance awareness of the effects of anesthesia, temperature and oxygen in order to improve mortality of subjects and accuracy of research. (2hours)

This workshop will give you hands on experience to see why the Guide for the Care and Use of Laboratory Animals suggests monitoring anesthetized rodents as you would other animals. Utilizing pulse oximetry, you will have the opportunity to see how the vital signs of subjects are affected by different types of anesthesia (we will be utilizing Isoflurane and injectable anesthesia).

Specifically you will be able to see how different variables such as the amount of anesthesia, oxygen and temperature impact a subject's vital signs.

Lastly, we will discuss how non-invasive monitoring can help shed light on your research and how it relates to translational medicine.

12 people maximum

Workshop #4

Principles of Long Bone Plating in Large Animals

Sheep Legs will be used to teach the principles of plate application in a critical length defect model. The techniques taught will be applicable to multiple species. Participants will be instructed in plate and screw size and type selection and application. Hands-on application of plates to a sheep femur and tibia will be performed by each participant, including muscle dissection of the surrounding tissues. Post-operative care of this model will also be discussed.

6 people maximum

Workshop #5

Surgical Techniques in the Mouse: Kidney Capsule Implantation and Prostate Injection

The Jackson Laboratory will conduct a workshop on two surgical techniques in the mouse: Kidney Capsule Implantation and Prostate Injection. In support of the development of murine models to study human cancer, this workshop will provide the participants with the training to transplant tumors under the kidney capsule or inject cells in the prostate. This hands-on workshop will also cover regional mouse anatomy, surgical standards and postoperative care. Participants should have basic surgical knowledge and the ability to work under a dissecting microscope.

12 people maximum

Workshop #6

Surgical Anatomy and Techniques for Postero-lumbar Fusion (PLF) in Rabbits

The surgical anatomy and techniques to study the safety and efficacy of osteoinductive and osteoconductive materials as a conventional postero-lumbar vertebral fusion (PLF) will be demonstrated in the rabbit. Participants will be shown the necessity of essential instrumentation, as well as to how to avoid the numerous possible pitfalls and complications in this procedure.

4 people maximum

Workshop #7

Intra-articular Injections and Orthotopic abdominal injections

In this workshop we will cover methods for test article administration in the IA space as well as the kidney, liver, and spleen of SD rats. Alternative routes for access and methods of closure will be explored. Finally, methods to support proper aseptic technique while allowing high throughput will be detailed.

6 people maximum

Multiple dry labs and workshops (more to follow- in planning)

- Workshop 1 (FREE): **Surgical Writing-From Protocol Development, Conception of the Research Hypothesis, Data Collection and Publication.**

2 parts:

Part 1: A one hour lecture open to all will be given during one of the full meeting sessions.

Part 2: (limitation of participants, must register in advance)

A “hands-on” workshop will address the details associated with protocol development from the conception of the idea and characterization of the hypothesis to integration of the written scientific protocol. Possibility of success will be related to the individual interest and participation in the process. A final written abstract with a completed version of the whole workshop will be gathered at the end of this experience. (workshop participants must bring research idea (hypothetical or real) for workshop instruction)

- Workshop 2: (Drylab) Surgical knot tying
- Additional Drylabs: Details to follow

Meet the Vendors - Meet with companies developing the cutting-edge technologies used in the surgical research field. Including but not limited to surgical monitors, instruments, anesthesia, medical devices, ports, telemetry, lab animal resources and surgical services.

