



## **Frontiers in Imaging:**

Workshop on High Frequency Ultrasound Imaging of the  
Laboratory Mouse *In Vivo*

**For More Information Contact:**  
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### **WORKSHOP OUTLINE** *(subject to change)*

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**Wednesday March 29, 2006**

**Highseas Conference Center**

5:00 – 6:00pm, Workshop Registration/Reception

6:00 – 7:00pm, Dinner

**Thursday March 30, 2006**

**GRB Conference Room 3225**

9:00 -10:00 am:

**Introduction of mouse genetics**

*Presenter: Dr. John Macauley, The Jackson laboratory*

10:00 – 10:45 am:

**Comparative Anatomy & Physiology**

*Presenters: Joe Gile, The Jackson Laboratory*

- Review of anatomical and physiological understanding of the mouse;
- Comparative overview of anatomical and physiological variances and similarities between mouse and human models

10:45 – 11:00 am:

**Break**

11:00 – 11:45:

**Understanding Mouse Anesthesia:**

*Presenter: Dr. Anthony Nicholson, The Jackson Laboratory*

- Review of different physiological effects of different anesthesia agents and considerations when selecting anesthesia approach.

11:45 – 12:30 pm:

**Introduction to High-Resolution Micro-Ultrasound**

*Presenter: Dr. F. Stuart Foster, Professor and Associate Chair,*

Department of Medical Biophysics, University of Toronto  
Chief Technical Officer and Chairman, VisualSonics

- Understanding of the physics of high-resolution micro-ultrasound
- New capabilities of high-resolution ultrasound versus conventional ultrasound
- Selected applications
- Future evolution of the technology

12:30 – 1:15 pm:

**Lunch (box lunches)**

**GRB Conference Room 3225**

1:15 – 2:00 pm:

**High-Frequency Ultrasound Imaging of Mouse Cancer Models**

*Presenter: Dr. James Lacefield, University of Western Ontario*

2:00 – 2:45 pm

**Cardiac imaging in the mouse *in vivo***

*Presenter: Dr. Titaina Potdevin, Application Specialist, VisualSonics*

2:45 – 3:00

**Break**

3:00 – 3:45 pm:

**Imaging the mouse embryo *in vivo***

*Presenter: Dr. Stephanie Mann, University of Arizona*

**GRB Training Lab**

3:45 – 5:30 pm:

**Hands-On *In Vivo* Imaging Session:**

- All students are taken through imaging select procedures on an anesthetized mouse. Images can then be saved to disc or the network.
- 1 – 2 workstations will be made available of post-imaging analysis.

5:30pm, **Adjourn for the day.**

6:00 – 7:00pm, Dinner, Highseas Conference Center

**Friday March 31, 2006**

**GRB Conference Room 3225**

9:00 – 10:00 am:

**Review of Applications of Ultrasound and High-Resolution  
Micro-Ultrasound**

*Presenter: Dr. Titaina Potdevin, Application Specialist, VisualSonics*

- Describe key benefits and utility of the modality for cardiovascular research.
- Provide overview of the central modalities (B-Mode, M-Mode, Doppler Mode, Color Doppler, EKV and 3D imaging).
- Describe the advances made in high-resolution ultrasound (40 MHz+) to improve its utility for phenotypic analysis in small animals.
- Describe key cardiac measurements and expected results.
- Describe other modalities and how they compare for cardiac imaging of mice.

10:00 – 11:30 pm:

***In Vivo* Imaging Demonstration:**

*Presenter:* **Dr. Titaina Potdevin**, Application Specialist, VisualSonics

Demonstration of:

- Using ultrasound to visualize and guide *in vivo* injections into myocardium/wall;
- Imaging of mouse embryos. Review of key developmental characteristics able to be visualized.

11:30

**Lunch**

**GRB Training Lab**

12:15 – 5:30 pm:

**Hands-On *In Vivo* Imaging Session:**

*Presenter:* **Dr. Titaina Potdevin**, Application Specialist, VisualSonics

- All students are taken through imaging select procedures on an anesthetized mouse. Images can then be saved to disc or the network.
- 1 – 2 workstations may be made available of post-imaging analysis.

5:30pm

**Adjourn, End of Workshop**

6:00 – 7:00pm, Dinner, Highseas Conference Center