



## AGENDA FOR COURSE IN SMALL ANIMAL MRI, BERGEN, OCT 25<sup>TH</sup> – 27<sup>TH</sup>, 2011

### DURATION:

- 25<sup>th</sup> and 26<sup>th</sup> of Oct, from 9 AM to 16:00 PM: **Theoretical sessions with practical demonstrations**
- 27<sup>th</sup> of Sep, from 9 AM to 16:00 PM: **Hands-on sessions** (optional participation)
- We will provide coffee and tea during breaks. Note that lunch is not included in the course.

### LOCATION:

- All lectures will be held on the 4<sup>th</sup> floor of the BB building in the “Histological 3”. To access the lecture room, locate the red circular stairway on the 3<sup>rd</sup> floor of the BBB building (which is right next to bridge connecting BBB to Haukeland) and then walk up these stairs to the 4<sup>th</sup> floor. Take a left, walk over another bridge, through the door. The Histological 3 is on your left. If you have problems finding the place, please call Tina at 46414145.
- The practical sessions will take place in the MRI facility at Vivarium (animal facility), which is located on the 3<sup>rd</sup> floor of the Haukeland Hospital (see <http://www.uib.no/vivarium/> for more information.). We will always meet 10 min before the sessions at the main entrance to Vivarium.

### COURSE CONTENT:

- We have designed the course for those of you who would like to have a deeper understanding of MRI techniques, so it is particularly suited and recommended to PhD students and researchers who have ongoing projects using MRI of small animals.
- We have divided the course into two parts. The first two days of the course will consist of lectures on basic MRI physics, covering concepts such as magnetization, resonant precession, excitation, relaxation and imaging gradients. We will furthermore focus on explaining in some detail two very important concepts in MRI: the signal-to-noise ratio and contrast. We will discuss various factors influencing both SNR and contrast and demonstrate these concepts in practice by running experiments on water phantoms and a piece of bacon. We will conclude by showing post-processing possibilities using Paravision and external software, such as Osirix.
- The third day of the course will consist of practical information regarding general use and safety rules and hand-on sessions. We will divide into several groups (depending on the number of participants) to give participants an opportunity to run the scanner by themselves and to image a live animal. In addition, we will demonstrate animal preparation and anesthesia. Participation during this day will be optional since some of you already have received training to operate the scanner.
- We welcome any feedback you can give us at the end of the course regarding the course format and content (we will distribute evaluation forms).
- You will receive course material during the course. If you would prefer to receive the course material ahead of time, please email [tina.pavlin@biomed.uib.no](mailto:tina.pavlin@biomed.uib.no)

### COURSE ACCREDITATION

- A lot of you have enquired whether the course gives any study points. As of now, the course is not yet a part of any curriculum. However, you can apply to get a few points for the course through your academic advisor. At the completion of the course you will receive a Certificate which you can use for that purpose.

For further info about our facility, go to: [https://wikihost.uib.no/mriwiki/index.php/Main\\_Page](https://wikihost.uib.no/mriwiki/index.php/Main_Page)

<b>Tuesday Oct 25<sup>th</sup></b>	<b>BBB, Histological 3</b>
<b>09:00-09:30</b>	<b>Introduction</b>
09:30-09:45	Questions and Coffee Break
<b>09:45-10:30</b>	<b>Lectures on MRI physics: Basic MRI concepts, part 1</b>
10:30-10:45	Questions and Coffee Break
<b>10:45-11:30</b>	<b>Lectures on MRI physics: Basic MRI concepts, part 2</b>
11:30-12:30	Lunch Break
<b>12:30-13:15</b>	<b>Demonstration on MRI physics: Signal-to-noise ratio in MRI, part 1</b>
13:15-13:30	Questions and Coffee Break
<b>13:30-14:15</b>	<b>Demonstration on MRI physics: Signal-to-noise ratio in MRI, part 2</b>
14:15-14:30	Questions and Coffee Break
<b>14:30-15:30</b>	<b>Scanning for fun: MRI of fruits and vegetables</b>
15:30-16:00	Questions and Adjourn
<b>Wednesday Oct 26<sup>th</sup></b>	<b>BBB, Histological 3</b>
<b>09:00-09:45</b>	<b>Demonstration on MRI physics: Contrast in MRI, part 1</b>
09:45-10:00	Questions and Coffee Break
<b>10:00-10:45</b>	<b>Demonstration on MRI physics: Contrast in MRI, part 2</b>
10:45-11:00	Questions and Coffee Break
<b>11:00-11:45</b>	<b>Examples of some common applications</b>
11:45-12:30	Lunch Break
<b>12:30-13:00</b>	<b>Transferring data from the scanner</b>
13:00-13:15	Questions and Coffee Break
<b>13:15-14:00</b>	<b>Processing Data: Paravision</b>
14:00-14:15	Questions and Coffee Break
<b>14:15-15:00</b>	<b>Processing Data: Osirix (possibly Matlab)</b>
15:00-15:30	Questions and Adjourn
<b>Thursday Oct 27<sup>th</sup></b>	<b>VIVARIUM</b>
<b>09:00-09:45</b>	<b>Practical issues: MRI safety, booking, etc..</b>
09:45-10:15	Break
<b>10:15-11:45</b>	<b>Practical Session: Group 1</b>
11:45-12:30	Lunch Break
<b>12:30-14:00</b>	<b>Practical Session: Group 2</b>
14:00-14:30	Break
<b>14:30-16:00</b>	<b>Practical Session: Group 3</b>