**PhD course schedule:**

**Anatomical and physiological fingerprinting of the human brain with multi-modal MRI**

Monday 26th February – 2 March 2018

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| **Time** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |
| 9:00 – 9:30 (30 min) | Recap of basic MR and imaging principles*Lars Hanson* | Recap: qMRI | DWI: Group work presentation | BOLD/ASL:Calibrated BOLD and CMRO2 measured using ASL and BOLD methods*Richard Wise*Recap: ASL/BOLD | Practical group work |
| 9:30-10:10 (40 min) | Recap of basic MR and imaging principles*Lars Hanson* | DWI: Diffusion and Anatomy*Tim Dyrby* | DWI: Group work presentation | Practical group work |
| 10:10:- 10:15 (5 mn) | Short BREAK | Short BREAK | Short BREAK | Short BREAK | Short BREAK |
| 10:15-10:55 (40 min) | Recap of basic MR and imaging principles*Lars Hanson* | DWI:Diffusion MRI and acquisition quality*Henrik Lundell* | DWI: Group work presentation Recap: DWI | MRS:MR spectroscopy: localization, signal evolution and signal analysis*Vincent Boer* | Practical group work |
| 10:55- 11:35 (40 min) | qMRI:Introduction to quantitative MRI*Gunther Helms* | DWI: Processing, Modelling, tractography*Kasper Andersen* | BOLD: Basic introduction and physiology.*Louise Baruël Johansen* |  | Short BREAKMRS:Multimodal MR spectroscopy*Uzay Emir (60 min)* |
| 11:35:- 11:40 (5 min) |  | Short BREAK | Short BREAK | Short BREAK |  |
| 11:40-12:20 (40 min) |  | Practical group work pre- and clinical MRI and simulations*Human 3T MRI, preclinical 7T MRI, microstructure simulations* | ASL: Basic principle, analysis and application*Esben Petersen* | MRS: Neuroscientific applications of MR spectroscopy*Anouk Marsman* |  |
| LUNCH (12-12:40) |  |
| qMRI:Applications and pitfalls *Nikolaus Weiskopf* | Recap: MRS |
| 12:20-13:00 (40 min) |  | LUNCH | LUNCH | LUNCH | LUNCH |
| 13:00- 13:40 (40 min) |  | Practical group work pre- and clinical MRI and simulations | BOLD: Analysis and design (GLM, block, event related and resting state) *Ayna Baladi Nejad* | Practical group work*Human 7T* | Summary:Why Multimodal thinking?*Hartwig Siebner* |
| Short break |
| 13:40-14:40 (60 min) | Group work | Practical group work pre- and clinical MRI and simulations | Practical work on 3 topics:1: Data acquisition (ASL and BOLD) | Practical group work | Summary :Table discussion and reflections on multimodal imaging*Hartwig, Tim, Esben, Kristoffer, Axel, Lars* |
| 14:40-14:45 (5 min) | Short BREAK | Short BREAK | Short BREAK | Short BREAK | Goodbye |
| 14:45-15:45 (60 min) | Group work | Practical group work pre- and clinical MRI and simulations | 2: functional ASL and BOLD analysis (Block design) | Practical group work |  |
| +15:45-16:45 ( 60 min) | Group work | Practical group work pre- and clinical MRI and simulations | 3: BOLD analysis using SPM (event related and resting state designs) | Practical group work |  |