

19th *in vivo* NMR course

October 16–20, 2023

Wageningen University and Research, Wageningen, the Netherlands

Scope of the course

The aim of this course is to introduce PhD students, post-docs, and other scientists in the principles of modern *in vivo* MR imaging (MRI) and spectroscopy (MRS) as applied to living systems in biomedical and biological research. The course will consist of lectures by experts in the field, as well as theoretical and practical exercises and demonstrations.

Program

Day 1 - 3: Basic MRI and MRS

- Fundamentals of MRI and MR spectroscopy
- Basic contrast mechanisms and pulse sequences
- k-space
- Exercises and practicals (including RF coil building workshop with WaveTronica)

Day 4 - 5: Applications and advanced topics

- Diffusion, perfusion, flow
- Functional MRI
- Quantitative MRI
- Low field and ultra-high field MRI
- Acceleration and motion compensation
- and more ...

Registration

Registration costs are €350 for PhD students and post-docs, and €700 for medical physicists and other participants. Fees cover attendance to the lectures and practicals, as well as lunch and coffee/tea. Total number of participants is limited to 24.

Register [on this website](#).

We anticipate this to be an **in-person** meeting. The course will NOT be held online in case COVID regulations do not allow an in-person meeting. A full refund of registration costs will then be provided.

Contact

Camilla Terenzi, PhD
Wageningen University and Research
camilla.terenzi@wur.nl

Location

Wageningen University and Research
Wageningen, the Netherlands

We reserve the right to cancel with too little attendees. If so, a full refund of registration costs will be provided.



19th *in vivo* NMR course

October 16–20, 2023

Wageningen University and Research, Wageningen, the Netherlands

Day 1 (Monday October 16) Z1092 Axis

8.45 - 9.15	Walk-in and coffee	
9.15 - 9.30	Welcome and course introduction	Camilla Terenzi
9.30 - 12.00	Basics of MRI, Part I	Bram Coolen
12.00 - 13.00	Lunch	
13.00 - 14.15	Basics of MRI, Part II	Bram Coolen
14.30 - 17.30	MRI practicals and assignments	Frank Vergeldt, Yanzhang Luo, (& Bram Coolen)

Day 2 (Tuesday October 17) Z1092 Axis

09.00 - 10:00	Advanced MRI contrast mechanisms	Bram Coolen
10.15 - 12.30	k-space and imaging principles	Tom Scheenen
12.30 - 13.15	Lunch	
13.15 - 14.15	Steady-state sequences	Bram Coolen
14.30 - 17.30	MRI practicals and assignments	Frank Vergeldt, Yanzhang Luo (& Bram Coolen)

Day 3 (Wednesday October 18) Z1092 Axis

9.00 - 11.30	MR spectroscopy	Jeanine Prompers
11.45 - 12.30	MR hardware & RF coils	Alexander Raaijmakers
12.30 - 13.30	Lunch	
13.30 - 14.15	MR hardware & RF coils	Alexander Raaijmakers
14.30 - 17.30	RF coil building practical	WaveTronica
18.00 - ...	Dinner	

Day 4 (Thursday October 19) Z1092 Axis

09:00 - 10:00	Diffusion MRI & Tractography	Martijn Froeling
10.15 - 11.15	Phase-contrast MRI & 4D flow	Pim van Ooij
11:30 - 12:30	Artefacts in MRI	Frank Vergeldt
12.30 - 13.30	Lunch	
13.30 - 14.30	Quantitative MRI and Parameter fitting	Oliver Gurney Champion
14.45 - 15.45	Magnetization transfer and CEST MRI	Camilla Terenzi
16.00 - 17.00	MRI based cell tracking	Mangala Srinivas

Day 5 (Friday October 20) Z1092 Axis

9.00 - 10.00	<i>Institutional surprise topic</i>	Camilla Terenzi
10.15 - 11.15	Accelerated MRI & Advanced Reconstruction	Gustav Strijkers
11.30 - 12.30	Motion compensation and correction	TBA
12.30 - 13.30	Lunch	
13.30 - 14.30	BOLD and fMRI	TBA
14.45 - 15.45	Perfusion MRI	Thijs van Osch
16.00 - 17.00	From low- to high-field MRI	Tom O'Reilly

Coffee and tea will be available during the breaks and lunch will be provided.

The sessions with practicals and assignments on Monday and Tuesday afternoons will take place in the MAGNEFY facility, Helix Building (ground floor), Stippeneng 4, 6708 WE Wageningen.