



Statistical Parametric Mapping for MEG/EEG  
Monday 10<sup>th</sup> May – Thursday 13<sup>th</sup> May 2020

Online

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### **Wellcome Centre for Human Neuroimaging (MEG/EEG team):**

- Gareth Barnes
- Roberta Bianco
- Guillaume Flandin
- Karl Friston
- Vladimir Litvak
- Stephanie Mellor
- George O'Neill
- Peter Zeidman
- Tim Tierney

### **External Faculty:**

- Ryszard Aukstulewicz- Max Planck Institute for Empirical Aesthetics
- James Bonaiuto- French National Centre for Scientific Research
- Martin Dietz- Aarhus University
- Leonardo Duque Muñoz - Universidad de Antioquia
- Amirhossein Jafarian – University of Cambridge
- Rosalyn Moran- Kings College London
- Jose David Lopez- Universidad de Antioquia
- Ashwini Oswal- Oxford University
- Dimitris Pinotsis- City University of London
- Christophe Phillips- Universite de Liege
- Richard Rosch- Kings College London
- Jason Taylor- University of Manchester
- Ashley Tyrer – University of Bristol
- Tim West- Oxford University
- Bernadette Van Wijk - University of Amsterdam

## Course Agenda – Monday 10<sup>th</sup> May

<b>10.00 – 10.45</b>	<b>Pre-course chat with the attendees</b>	<b>All faculty</b>
<b>10.45 - 11.00</b>	<b>SPM introduction and resources</b>	<b>Guillaume Flandin</b>
<b>11.00 - 12.00</b>	<b>What are we measuring with M/EEG</b>	<b>George O’Neill</b>
<b>12. 00 - 13.00</b>	<b>Data pre-processing</b>	<b>Ashwini Oswal</b>
	<b>Break</b>	
<b>14.00 - 15.00</b>	<b>Data pre-processing demo</b>	<b>Roberta Bianco</b>
<b>15.00 - 16.00</b>	<b>General linear model and classical inference</b>	<b>Martin Dietz</b>
<b>16.00 -17.00</b>	<b>Multiple comparisons problems and solutions</b>	<b>Gareth Barnes</b>
<b>17.00 -18.00</b>	<b>General Q&amp;A</b>	<b>All faculty</b>

## Course Agenda – Tuesday 11<sup>th</sup> May

<b>10.00-11.00</b>	<b>General Q&amp;A</b>	<b>All faculty</b>
<b>11.00-12.30</b>	<b>Group M/EEG dataset analysis- demo</b>	<b>Jason Taylor</b>
<b>12.30 – 13.15</b>	<b>Analysis of Optically Pumped Magnetometers (OPM) data</b>	<b>Tim Tierney</b>
	<b>Break</b>	
<b>14.00 - 15.00</b>	<b>Bayesian inference</b>	<b>Peter Zeidman</b>
<b>15.00 – 16.00</b>	<b>M/EEG source analysis</b>	<b>Jose David Lopez</b>
<b>16.00 – 17.00</b>	<b>M/EEG source analysis -demo</b>	<b>Leonardo Duque Muñoz</b>
<b>17.00 - 18.00</b>	<b>General Q&amp;A</b>	<b>All faculty</b>

## Course Agenda – Wednesday 12<sup>th</sup> May

<b>10.00 - 11.00</b>	<b>General Q &amp; A</b>	<b>All faculty</b>
<b>11.00 - 12.00</b>	<b>The principles of dynamic causal modelling</b>	<b>Bernadette van Wijk</b>
<b>12.00 - 13.00</b>	<b>DCM for evoked responses</b>	<b>Ryszard Aukstulewicz</b>
	<b>Break</b>	
<b>14.00 -15.00</b>	<b>DCM for steady state responses</b>	<b>Rosalyn Moran</b>
<b>15.00 – 16.00</b>	<b>DCM demo</b>	<b>Ashley Tyrer</b>
<b>16.00 -17.00</b>	<b>Bayesian model selection and averaging</b>	<b>Richard Rosch</b>
<b>17.00 -</b>	<b>Clinic - questions and answers</b>	<b>Karl Friston</b>

## Course Agenda – Thursday 13<sup>th</sup> May (GatherTown)

**10.00 - 18.00**

**Practical day**

**All Faculty**

Practical hands-on session will take place in GatherTown. Participants can either work on SPM tutorial datasets or on their own data with the help of the faculty. There will also be an opportunity to ask questions in small tutorial groups for further discussions on the topics of the lectures.

## Course outline

The course will present instruction on the analysis of EEG and MEG data. The first three days will combine theoretical presentations with practical demonstrations of the different data analysis methods implemented in SPM. On the last day participants will have the opportunity to work on SPM tutorial data sets under the supervision of the course faculty. We also invite students to use their own data for analysis. The course is suitable for both beginners and more advanced users. We advise students to gain at least some minimal familiarity with the methodology, for example, from reading introductory articles available from the SPM web page (<http://www.fil.ion.ucl.ac.uk/spm/doc/>) or by scanning through Litvak et al. (2011) 'EEG and MEG data analysis in SPM8', *Comput Intell Neurosci* 2011:852961.