

## 21<sup>st</sup> San Servolo Advanced Epilepsy Course

### **Bridging Basic with Clinical Epileptology (8)**

#### **Contribution of non-neuronal cells to epilepsy and new therapeutic strategies**

**July 21– August 1<sup>st</sup>, 2025**  
**San Servolo (Venice) Italy**



**Course Directors: David Henshall (IRL) and Annamaria Vezzani (I)**



The main objective of the 8<sup>th</sup> edition of the Advanced Epilepsy Course *Bridging Basic with Clinical Epileptology* is to train attendees to improve the critical competence necessary to design an effective research project/activity in the field of epilepsy. The Course is addressed to neuroscientists, neurologists and other professionals with a documented background in epilepsy research. Lectures on general and specific topics will be interspersed with interactive seminars, workshops, and breakout sessions where small groups of attendees and faculty will be involved in tutorials. The main focus of the Course is the preparation of a project on a subject defined and assigned by the Course Directors. Groups of 6-8 students are formed at the beginning of the Course; each group will develop a research project under the supervision of two tutors. The progress of the project will be evaluated daily during group discussions with tutors. Each research project will be collectively discussed and evaluated during the last day of the Course.

#### **Faculty – tutors**

Annamaria Vezzani	I
David Henshall	IRL
Maria Elisa Calcagnotto	BR
Mark Cunningham	IRL
Marco de Curtis	I
Raymond Dingledine	US
Alon Friedman	CAN
Premek Jiruska	CR
Mathias Koepp	UK

Katja Kobow	D
Solomon Moshé	US
Heidrun Potschka	D
Matthew Walker	UK
Josè Serratosa	E

#### **Faculty – lecturers**

Avanzini Giuliano	I
Cross Helen	UK
Rita Garbelli	I
Gilles Huberfeld	F
David Loane	IRL
Stefanie Prast-Nielsen	S
Laura Tassi	I
Elisabetta Vaudano	I
Michele Simonato	I

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## Course Program

<b>Day 0</b>		
6.30 pm	<i>registration and welcome buffet dinner</i>	
<b>Day 1 – Chairs: David Henshall &amp; Giuliano Avanzini</b>		
8.30 -8.50	Welcome - Course Introduction	deCurtis Vezzani Henshall
8.50-9.20	Students & faculty introduction	all
9.20-10.00	Epilepsy and seizure classifications	Avanzini
10.00-10.40	Generalized epilepsies and seizures	Huberfeld
Coffee break		
11.00-11.40	Focal epilepsies and seizures	de Curtis
11.40-12.20	Early life epilepsies and seizures	Moshe
Lunch		
14.00-14.40	Status epilepticus	Walker
14.40-15.20	Genetic causes of epilepsy – monogenic/germinal mutations	Serratosa
15.20-16.00	Genetic causes of epilepsy – somatic mutations	Kobow
16.00-16.40	Acquired epilepsies	Loane/de Curtis
<b>17.00</b>	<b><i>first meeting of student teams with tutors</i></b>	
18.00	Do's and don'ts in Venice	Guarino
<b>Day 2 – Chairs: Annamaria Vezzani &amp; Alon Friedman</b>		
8.30 -9.10	Brain development and epileptogenic malformations	Garbelli
9.10-9.50	The epileptogenic process	Dingledine
9.50 -10.30	Animal models of epilepsy and seizures	Potschka
Coffee break		
11.00 -11.40	Neurons and epilepsy	Cunningham
11.40-12.20	Brain regions and networks and epilepsy	Jiruska
12.20-13.00	Astrocytes and epileptogenesis	Vezzani
Lunch		
14.00-14.40	Microglia and epileptogenesis	Loane
14.40-15.20	Brain plasticity and seizures	Calcagnotto
15.20-16.00	Cerebral vasculature plasticity and blood-brain barrier	Friedman
16.00-16.40	Epilepsy mechanisms according to the lesion subtypes	Huberfeld
<b>Day 3 – Chairs: Marco de Curtis &amp; Nico Moshe</b>		
8.30 -9.10	Gastrointestinal tract - brain reciprocal communication	Prast-Nielsen
9.10-9.50	Cellular physiology recordings	Cunningham
9.50 -10.30	Neurophysiological recording of seizure activity	Jiruska
Coffee break		
11.00 -11.40	Epigenetics and gene regulation	Kobow
11.40-12.20	Molecular approaches to study of epilepsy	Henshall
lunch		
14.00-14.40	Imaging seizure activity in experimental models	Calcagnotto
14.40-15.20	Neurophysiological monitoring in clinical epilepsies (incl. stereo-EEG)	Tassi
15.20-16.00	Structural and functional neuroimaging in epilepsies	Koepp
16.00-16.40	Neuropathology of the epilepsies	Garbelli
17.00	Special Lecture: Why and how to write a grant	Vaudano +Huberfeld

<b>Day 4—Chairs</b>		<b>Heidrun Potschka &amp; Ray Dingledine</b>	
8.30 -10.30	<b>Practical session: Digital Neuropathology</b>		Garbelli-Kobow
Coffee break			
11.00 -13.00	<b>Practical session (videoEEG – patients and animal models)</b>		Tassi - Moshe
lunch			
14.00-14;45	Special Lecture: Grant opportunities for young scientists		Vaudano
14.45-15.15	Big data analysis		Prast-Nielsen
<b>afternoon</b>	<b>Project group work</b>		
<b>Day 5 –Chairs:</b>		<b>Elisa Calcagnotto &amp; Mark Cunningham</b>	
8.30 -9.10	Epilepsy surgery: indications and protocols		Tassi
9.10-9.50	ASM mechanisms of actions and drug resistance		Potschka
9.50 -10.30	New treatments in epilepsy and other advanced therapies		Walker
Coffee break			
11.00 -11.40	Antiepileptogenic/disease-modifying interventions		Simonato
11.40-12.20	Disease-specific and new treatments (eg. immune, diets, etc.)		Cross
lunch			
14.00-14.40	Biomarkers: EEG and imaging		Friedman
<b>afternoon</b>	<b>Project group work</b>		
18.00	Special lecture: epilepsy on the planet		Cross
<b>Day 6 –Chairs:</b>		<b>Premysl Jiruska &amp; Katja Kobow</b>	
8.30 -9.10	Biomarkers: biofluid-based		Henshall
9.10-9.50	Precision medicine		Serratosa
9.50 -10.30	Preclinical trial design		Simonato
Coffee break			
11.00 -11.40	Epilepsy-related comorbidities and epilepsy as comorbidity		Koepf
11.00 -11.40	Epilepsy-related comorbidities comorbidity: animal models		Dingledine
lunch			
<b>afternoon</b>	<b>Project group work</b>		
<b>Day 7-10 -</b>			
<b>all day</b>	<b>Project group work</b>		
<b>Day 11 –</b>			
8.30-12.30	<b>Working group presentations: - 45 minutes per group</b>		all tutors
2.00 pm	<b>Metella Paterlini Prize winner and end of the Course</b>		

