

# COMMISSION ON DIAGNOSTIC METHODS



Ingmar Blümcke

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William Barr (USA)  
Sallie Baxendale (UK)  
Sherifa Hamed (Egypt)  
Christoph Helmstaedter (Germany)  
John Langfitt (USA)  
Severine Samson (France)  
Mary-Lou Smith (Canada)  
Masako Watanabe (Japan)

### Education Task Force for Summer Schools in Diagnostic Methods

Ingmar Blümcke (Germany), Chair  
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Sallie Baxendale (UK)  
Sandor Beniczky (Denmark)  
Fernando Cendes (Brazil)  
Simon Keller (UK)  
Riki Matsumoto (Japan)  
Sarah Wilson (Australia)

## Aims

Our commission covers all major diagnostic modalities to clinically characterize a patient's epilepsy, namely electro-/neurophysiology, neuropsychology, imaging and neuropathology measures. Our objective is to provide standardized protocols, terminology use and guidelines for a cost-effective diagnosis of epilepsy and their related comorbidities as well as use of consensus classification systems for underlying etiologies. We have set up five task forces to achieve this goal, with particular emphasis to bridge any validation gap when using advanced as well as standardized technologies for the diagnosis of epilepsy. Another important topic of our commission is to develop state-of-the-art teaching courses addressing WHAT ? WHY? and HOW? to apply diagnostic methods, accessible for all ILAE members throughout the world. Our work thus very much depends on interaction with other ILAE commissions, dissemination and training.

# COMMISSION ON DIAGNOSTIC METHODS *(continued)*

## **Task Force for Neuropathology**

This term's major effort of the Neuropathology Task Force addresses tumor-related epilepsies. Neuropathology agreement has shown poor inter-rater agreement in the classification of brain tumors associated with long-term epilepsies (LEAT). LEATs mostly encompass glio-neuronal tumors, i.e. gangliogliomas and DNT (approx. 60-80%), and their frequencies vary largely between regional case series. We have built a collaborative virtual microscopy platform, which allowed us to review large series of LEAT variants by a panel of international neuropathologists and to encourage discussion between WHO and International Society of Neuropathology to achieve consensus terminology use and acceptance of a revised tumor classification system. Our task force has also organized a main session on brain tumors and epilepsy at the International Epilepsy Congress in Istanbul, September 7, 2015. The work was further disseminated by our International Neuropathology Summer School in Campinas, Brazil, July 26-30, 2015. In 2016, next courses will be organized in China (West China Hospital, Chengdu, August 29-September 1) and Erlangen, Germany (October 6-9).

## **Task Force for Neuropsychology**

An important aspect of our commission's work addressed neuropsychology measures during presurgical evaluation to be understandable for epileptologists when using or interpreting different test domains. Particular topics include measures for assessment of developmental hindrance, measures sensitive to antiepileptic drug treatment or sensitive to EEG pathology (electrophysiological epileptic activity, single spikes & spikewaves, grouped activity, nonconvulsive [cognitive] seizures). Consensus protocols for assessment of hemispheric dominance (IAT, fMRI, functional Doppler, dichotic listening), measures sensitive to surgical treatment, and measures and markers for assessing everyday functioning are other important issues. An official report defining minimum standards for neuropsychology assessment in epilepsy was published in 2015 (Wilson et al. *Epilepsia*. 2015 May;56(5):674-81. doi: 10.1111/

epi.12962) and a second report on neuropsychological measures in epilepsy surgery is envisaged for 2016. The task force will organize a first training course on neuropsychology and epilepsy in France, April 10-15, 2016. Thirty-six participants will take part in lectures, case presentations, and discussions designed to illustrate principles of differential diagnosis and case formulation in neuropsychological practice in epilepsy. Five days of course material will be presented by leading clinical experts in the field, including clinical neuropsychologists working in epilepsy programs from around the world.

## **Task Force for Neurophysiology**

A major goal of the Neurophysiology Task Force is to provide international consensus recommendations on WHAT? WHY? and HOW? to apply intracranial EEG (IEEG) investigations. The first manuscript is entitled: Diagnostic Utility of Invasive EEG for Epilepsy Surgery: indications, modalities and techniques, and has been finalized by all task force members. It will be submitted to ILAE's official journal *Epilepsia* in due time. Two additional projects will further address 1) recording and stimulation methodologies, including the results of a survey conducted among several epilepsy surgery centers and 2) data interpretation and results. Consensus recommendations will also be published in *Epilepsia*. These two papers will accompany similar work in progress from the Translational Task Force of ILAE's Neurobiology Commission aiming to provide methodological standards and functional correlates of electrophysiological in vivo depth recordings in rodents.

The Neurophysiology Task Force also aims to promote training for surface and intracranial EEG. The European and North-American SEEG courses have been successfully established since 2010, and trained almost 400 neurologists, neuropediatricians and neurosurgeons. The course includes didactic lectures, but primarily practical sessions to allow the acquisition of medical skills through case-based discussions. The Neurophysiology Task Force will also help to develop a third Asian SEEG training course, as well as two additional summer schools dedicated to EEG in neonates and advanced scalp EEG analysis.