European Network on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome
COST Action - CA15111 Training School:

"Summer school for translational research in ME/CFS"
Institute Medical Immunology, Charité Campus Virchow Klinikum
Föhrerstr. 15/Südstr. 2 13353 Berlin

24 June – 29 June 2018

Program

Sunday, 24 June 2018	
17.00 – 19.00	**Prof. Carmen Scheibenbogen** Welcome and Introduction into the course Dinner
Monday, 25 June: Clinical approach to ME/CFS	
	The Monday will start with short presentations about the background and work of the students participating in the summer school. We will then give an overview of the complex differential diagnosis and pathophysiology of fatigue. The afternoon topic is clinical presentation and diagnosis of ME/CFS.
10:00	Participants' presentations (10 min each)
12.00 – 13.00	**Prof. Carmen Scheibenbogen** Pathomechanisms of fatigue
13.00 -	Lunch
14.30 – 15.00	**Dr. Patricia Grabowski** Clinical picture and diagnosis of ME/CFS
15.15 – 16.00	**Dr. Eliana Lacerda** Assessing symptoms and diagnostic tools in ME/CFS
16.00 - 17.00	Discussions

Tuesday, 26 June: Biobanking, data management	
9.00 - 12.00	**Dr. Eliana Lacerda**, London School of Hygiene and Tropical Medicine, UK Biobanking, data management, ethics **Aims:** - To provide information about the use of biobanks to enhance biomedical research in ME/CFS, - To show how to use this information for planning and establishing high-quality bio-sample collections for current and future ME/CFS research,

	- To categorise disease-specific and general biobanks, and discuss the advantages/disadvantages for their use in diseases, such as ME/CFS, - To discuss the current ethical, legal, and social issues associated with biobanks. **Learning Outcomes:** At the end of the session, a successful student will expected to: - identify advantages and disadvantages of using biosample collections and/or established biobanks to use in their ME/CFS research - evaluate if a biosample collection or biobank is compliant with the current ELSI, and if the samples are adequate their own study plan data collection (that would enhance the samples analysis) and data management for potential future studies.
12.30 -	Lunch
14.00 – 17.00	**Dr. Luis Nacul**, London School of Hygiene and Tropical Medicine, UK Clinical and socio-demographic data - research questionnaires and measurements **Aims:** - To instruct students about the main research instruments for ME/CFS research, - To discuss the implications about the (lack of) standardisation in ME/CFS research, - To present a purposely-built database for enhancing ME/CFS research. **Learning Outcomes:** At the end of the session, a successful student will able to: - discuss the importance of standardization of procedures in ME/CFS research, - identify information that would be needed for future ME/CFS studies, and employ it to assess data collection instruments, - chose appropriate data collection instruments for ME/CFS research, - develop a data collection and data management plan for potential future studies.
Wednesday, 27 June: Antibodies and soluble biomarkers	
	Biomarker include both markers with a certain sensitivity and specifity for diagnosing ME/CFS as well as those which may allow to classify subtypes of the disease, be of value as indicators of prognosis, and to be predictive for response to treatment. We will give an overview of the EUROMENE Biomarker project and discuss potential markers of interest. In the practical work detection of specific antibodies by cytometric bead array will be performed.
9:00	**Dr. Franziska Sotzny** Soluble biomarker in CFS
10:00	Laboratory practical activities: CBA
13.00	Lunch
14.30 – 17.00	Laboratory practical activities: CBA
Thursday, 28 June: Metabolic biomarker	
	Metabolomics: Mitochondria plays a key role in cell metabolism as well as multitudes of other cellular processes. CFS is known to be a mitochondrial disorder where mitochondrial dynamics as well as metabolic pathways associated with mitochondria are affected during the disease progression. During this session, we will discuss about known facts about alterations in mitochondrial metabolic state. We will also discuss about potential factors behind mitochondrial metabolic alterations. This lecture will also provide new insights into novel ideas and technologies being developed to study

	mitochondrial alteration in CFS. ROS are produced in mitochondria. In the practical work ROS will be assessed by flow cytometry.
9.00 -	**Dr. Bhupesh Prusty** Metabolics in ME/CFS
10.00 -	Laboratory practical activities: ROS
13.00 -	Lunch
14.30 – 17.00	Laboratory practical activities: ROS
Friday, 29 June: Infection biomarker	
	Chronic Infections: This lecture will cover a brief session on known knowledge behind chronic infection and CFS. In addition, this lecture will also discuss on scientific and technical difficulties in chronic infection studies in CFS. We will also discuss potentials of novel ideas in this field and how to implement them to know more about role of chronic infection in CFS. We will also discuss about possible sample selection methods and what to expect from them. In the practical work EBV will be assessed by PCR
9.00 -	**Dr. Bhupesh Prusty** Chronic infection in ME/CFS
10.00 -	Laboratory practical activities: EBV PCR in Plasma and PBMCs
13.00 -	Lunch
14.00 – 16.00	Laboratory practical activities: EBV PCR in Plasma and PBMCs