ENU Day 2017

ENU day 2017 is coming!

We are excited to host this year's ENU day on **March 29, 2017, at ELSC**. The conference will focus on our community's scientific work, and will allow us to share our recent professional insights and experiences.

We invite you to **submit your abstracts by February 14, 2017**.

As we look forward to showcase the most up-to-date projects that are currently taking place at the ENU, we will offer an opportunity to update submitted abstracts until **February 28, 2017**.

High-quality abstracts containing contributions to the field of neuroimaging research are requested and will be considered. We especially encourage you to share work that took place at the ENU, and/or included the use of equipment or methodology that can be of interest to our community.

**Abstract guidelines:**

The body of the abstract should not exceed **300 words**. You are encouraged to divide the abstract into sections (i.e. introduction, methods, results, & conclusions), however this is not strictly necessary. Please provide a clear title, and include all authors and affiliations beneath the title.

A lab may submit multiple abstracts.

You may indicate your preference for poster or oral presentation. The ENU day program committee will do its best to follow your preference. Note, however, that final allocation to a certain presentation type and time slot is subject to schedule limitations.

Abstracts should be sent to **enu-day-2017@elsc.huji.ac.il**.

Feel free to contact the ENU Team for questions or inquiries. We would be happy to help.

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**PAST EVENTS:**

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The 3rd ENU Annual Workshop on  Nov 25-26, 2015

In 2015 we hosted the BrainVoyager team for a 2-days course on various fMRI analysis tools.

We had afternoon scientific session with Prof. Rainer Goebel, Maastrich University and Prof. Nikolaus Weiskopf from UCL.

See Full Program

First talk at 17:00 with Rainer Goebel, Maastrich University, Netherlands

On the topic of
"Revealing Mesoscopic Coding Principles in the Human Brain with Ultra-High Magnetic Field fMRI"

Abstract: Ultra-high magnetic field (UHF) scanners (7 Tesla and higher) provide the possibility to study the functional organisation of the human brain at the level of cortical columns and cortical layers. First progress in this direction has been achieved by revealing individual topographic columnar-level orientation maps in human primary visual cortex, frequency maps in primary auditory cortex and axis-of-motion maps in area hMT/V5. In an extension to multi-sensory stimuli, we revealed that increased spatial resolution at 7 Tesla leads to a better segregation of unimodal and heteromodal voxels in the superior temporal gyrus and planum temporale. More recently, also cognitive tasks have been investigated at the mesoscopic level. We, for example, relate the content of perception during perceptual switches of ambiguous motion stimuli (Plaids) to dynamic activation changes in direction-selective columns in area hMT/V5. Furthermore, we reveal that top-down effects in visual tasks operate on supragranular cortical layers in area V1, which is compatible with predictive coding theories. The presented studies demonstrate that the achievable mesoscopic level of investigation (columns and layers) offered by UHF fMRI allows to map columnar-level features within specialized brain areas as well as revealing layer-specific functional bottom-up and top-down connectivity. Furthermore, mesoscopic fMRI establishes an important bridge to invasive animal research, especially to optical imaging and electrical neuronal population recordings.

Second talk at 18:00 with Nikolaus Weiskopf, University College London, UK and Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

On the topic of
"Towards In-Vivo Histology using MRI"
Abstract: Understanding the normal and diseased human brain crucially depends on reliable knowledge of its anatomical microstructure and functional micro-organization (e.g., cortical layers and columns of 200-1000µm dimension). Even small changes in this microstructure can cause debilitating diseases. Until now, the microstructure can only be reliably determined using invasive methods, e.g., ex-vivo histology. This limits neuroscience, clinical research and diagnosis. I will discuss how an interdisciplinary approach developing novel MRI acquisition methods, image processing methods and integrated biophysical models aims to achieve quantitative histological measures of brain tissue, leading to the emerging field of in vivo histology using MRI. In particular, I will present recent methodological advances in quantitative MRI and related biophysical modelling. Examples will include: characterization of cortical myelination and its relation to function; mapping of the axonal g-ratio in a population; changes due to spinal cord injury; age-related brain changes. The presentation will conclude with an outlook on future developments, applications and the potential impact of in-vivo histology using MRI.

ENU mini- workshop on Diffusion MRI of the Brain: Basics, Methods & Applications.

The DTI workshop was held on Sunday, December 21st, 2014 from 10:00 to 15:00 at ELSC.

Speakers:

Prof. Yaniv Assaf, Tel Aviv University.
Dr. Aviv Mezer, ELSC
Dr. Michal Ben-Shachar, Bar Ilan University
Ido Tavor, Tel Aviv University

ENU mini-workshop on Functional MRI: The art of data acquisition by Dr. Ben Inglis

The fMRI workshop was held on February 26, 2013. Presentations and video lectures inside.

Last Updated: July, 2016
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It is now widely accepted that deciphering the enigma of the brain is the most challenging intellectual endeavor of the 21st century, "The Century of the Brain" - Join our quest and become a friend of ELSC.

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