

2nd International Winter Course & Workshop on Neuroimaging: Brain Connectivity and Mental Health

Theoretical Course on Neuroanatomy, Basic & Clinical Neuromodulation and Neuroimaging

Dates: February 1 - February 4, 2024

Location: Santa Cruz de Tenerife - Escuela Politécnica Superior de Ingeniería (EPSI). Sección de Náutica Máquinas y Radioelectrónica Naval
Universidad de La Laguna - Vía Auxiliar Paso Alto, 2, 3800
Santa Cruz de Tenerife, Spain



HARVARD
MEDICAL SCHOOL



Organized by the University of La Laguna and Harvard University

Scientific Organizers: Nikos Makris (Neuroimaging and Neuroanatomy), Ron Kikinis (Computer Medical Imaging) and Stefano Pallanti (Neuropsychiatry).

Local Organizing Committee: Jose Luis González-Mora, Alberto Dominguez Martinez, Jose Luis Carrasco Juan, Agustin Castañeyra Perdomo (ULL Faculty of Health Sciences and IUNE).

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Duration of individual presentations and discussion: In general, the duration of each presentation is 20-30 minutes followed by a 10-15 minutes discussion in an informal academic setting.

Note on time zones: 13pm-17:30pm refers to Canary Islands local time, whereas (8:00-12PM EST) refers to The corresponding USA East Coast time zone, i.e., Canary Islands local time is five (5) hours ahead of EST.

Thursday, February 1 (time TBD): Theoretical course Day 1, of Winter Course on Neuroimaging in Santa Cruz de Tenerife – ULL

Program: A) Course Introduction and, B) Brain Circuits in Basic and Clinical Neuroscience using Imaging
13pm-17:30pm (8:00-12PM EST)

13:00pm-13:30pm Nikos Makris (Harvard Medical School): Course Introduction; Mission of the Course and outcomes resulting from last year's 1st International Winter Course in Neuroimaging

13:30pm-14:00pm (8:30am-9:00am EST) Pradeep Bhide (Florida State University)

14:00pm-14:30pm (9:00am -9:30am EST) Jarrett Rushmore (Boston University)

14:30pm-15:00pm (9:30am -10:00am EST) Douglas Rosene (Boston University)

15:00pm-15:30pm (10:00am-10:30am EST) David Perez (Harvard Medical School)

15:30pm-16:00pm (10:30am-11:00am EST) Darin Dougherty (Harvard Medical School)

16:00-16:30 (11:00am-11:30am EST) Maurizio Fava (Harvard Medical School)

16:30-17:00 (11:30am-12:00am EST) Bruce Jenkins (Harvard Medical School)

17:00pm-17:30pm Juan Prieto (Harvard Medical School)

Friday, February 2 (time TBD): Theoretical course Day 2, of Winter Course on Neuroimaging in Santa Cruz de Tenerife – ULL

Program: Neuromodulation and Mental Health in the Addictive world

14:00pm-14:45pm Stefano Pallanti (Albert Einstein College of Medicine): TMS in Gambling Disorder and behavioral addiction

14:45pm-15:30pm Henrietta Bowden-Jones (University College London): Gambling Disorder: A clinical Overview

15:30pm-16:15pm (10:30-11:15 EST) Joan Camprodon (Harvard Medical School): Precision TMS

Saturday, February 3: Theoretical course Day 3, of Winter Course on Neuroimaging in Santa Cruz de Tenerife – ULL

Program: Technological foundations of Transcranial Magnetic Stimulation

10:00–10:10am Nikos Makris: Introduction to the session (to get everyone in the mood: to be attentive and

creative) (Harvard Medical School)

10:10–10:40am Risto Ilmoniemi: mTMS: history, purpose, and future potential (to realize the unique opportunity) (Aalto University)

10:50–11:20am Victor Souza: Navigated mTMS and robotics for accuracy and speed (to describe the technical challenges and beauty of the solution) (Aalto University)

11:30–12:00pm Dubravko Kicic: Goals for clinical use: Automation, workflow, and ease of use (to explain the need for commercialization) (Aalto University)

12:10–12:40pm Pantelis Lioumis: Brain signals evoked by TMS; TMS–EEG (to explain the potential for biomarkers and for targeted therapy) (Aalto University)

Sunday, February 4: Theoretical course Day 4, of Winter Course on Neuroimaging in Santa Cruz de Tenerife – ULL

Program: Use of 3D Slicer for Teaching Anatomy

11am-13:30pm: Brain Connectivity and Technological Foundations

Nikos Makris (Harvard Medical School): Brain connectivity in imaging

C-F Westin (Harvard Medical School): Next-generation neuroimaging: Head-only scanners and open source pulse sequences

Juan Ruiz Alzola (Universidad de Las Palmas de Gran Canaria): Logistics for imaging technology in universities and hospitals in developed countries and countries under development

Break

14:30 pm-15:30pm:3D Slicer for the Exploration of Brain Morphology and Connectivity

Ron Kikinis (Harvard Medical School): Reproducible Science: Philosophy and Tools

Zora Kikinis (Harvard Medical School): dMRI tractography using 3D Slicer

Discussion

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Mission and Objectives of Winter Course and Workshop on Neuroimaging

To generate good will and forge quality international relationships among motivated colleagues and to conceive quality projects based on reciprocal enthusiasm and technical capabilities of participants. To foresee feasible avenues of international funding devoid of conflict of interest of the participants. To elucidate and disseminate knowledge to students in medical schools as well as undergraduate and graduate programs and to achieve practical outcomes through workshops during the course, for example by using 3D

Slicer in basic imaging research and clinical practice. It is our intent to keep the scientific and administrative processes of this endeavour as simple as possible and devoid of conflict of interest.

Addendum

The 2nd International Winter Course on Neuroimaging includes
A) Workshop on 3D Slicer during the NAMIC project week, and
B) Satellite Seminar Series in association with IUNE-ULL

A) Workshop on SLICER 3D and Neuroanatomy

Dates: January 29 – January 31

Location: Las Palmas de Gran Canaria – NAMIC, ULPGC and ULL

Monday, January 29: Workshop Day 1, in “NAMIC week” area

Tuesday, January 30: Workshop Day 2, in “NAMIC week” area

Wednesday, January 31: Workshop Day 3, in “NAMIC week” area

Thursday, February 1: Workshop Day 4, in “NAMIC week” area (Day 1 of the theoretical Winter Course in Tenerife is happening in parallel)

Friday, February 2: Workshop Day 5, in “NAMIC week” area (Day 2 of the theoretical Winter Course in Tenerife is happening in parallel)

Trainers: Prof. Zora Kikinis; Ms. Kayley Haggerty; Ms. Poliana Hartung Toppa; Mr. George Papadimitriou; Prof. Jarrett Rushmore

B) Satellite Seminar Series (IUNE-ULL)

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Thursday, February 1: Nikos Makris (Harvard Medical School), Juan Prieto (Harvard Medical School), Jose Luis González-Mora (Universidad de La Laguna, IUNE), Alberto Dominguez Martinez (Universidad de La Laguna, IUNE).

Friday, February 2: Stefano Pallanti (Albert Einstein College of Medicine), Pantelis Lioumis (Aalto University), Alberto Dominguez Martinez (Universidad de La Laguna, IUNE).

Tentative talks for Satellite Seminar Series (IUNE-ULL)

Manuel de Vega and Francesca Vitale, "TMS and tDCS as tools for functional brain analysis"

Hipólito Marrero, Damian Jan and Agustina Birba. "Neuro-cognitive toolbox to assess approach, avoidance, and inhibition in mental disorders (NEUROCOGTOOL)."

José Luis González-Mora, "Optoelectronic interface for chronic intraosseous implantation aimed at measuring neural activity in the human brain"