

## **Neurotechnology: Science, Medicine, Marketplace and Ethics**

Santander, June 24-28

This summer school will provide participants with an updated vision of Neurotechnology from four different angles or perspectives: the scientific and technological, the clinical, the transition to the market and the ethical. On the first day we start the course with a broad introduction to the field of Neurotechnology, defined as methods or devices to record or alter the activity of the nervous system, reviewing the most recent advances in science and technology and a plethora of applications. On the second day we will focus on state-of-the-art research represented by neurotechnology advances and experimental work happening in some of the most advanced laboratories. On the third day we will discuss with real world applications of neurotechnology to unsolved clinical problems like paralysis after spinal cord injury or stroke and their transition to the clinical practice. On the fourth day we will focus on the translation of neurotechnology to the market and interact with industry representatives. The final day will serve as a wrap-up transition to tackle the ethical and societal challenges neurotechnologies rise, discussing ethical guidelines and like neurorights.

The objectives of this course are:

- a) to provide the audience with a multidisciplinary overview of neurotechnology
- b) to highlight its clinical applications
- c) to explore market transitions of neurotechnology
- d) to awaken ethical and societal discussion around neurotechnology benefits and risks.

This course is oriented to an audience interested in understanding how the direct technological interaction with the nervous system can change scientific and medical practice and also future society.

Descripción: Curso anual, en colaboración con el Spain Neurotech, que cubrirá las nuevas neurotecnologías y sus aplicaciones a la ciencia, clínica y emprendimiento. El curso, que será íntegramente en inglés, aspira a convertirse en el punto de encuentro anual más importante de la neurotecnología en España y en Europa.

Directors

**Rafael Yuste**

Columbia

**Alvaro Pascual-Leone**

Harvard

**José Carmena**

Berkeley

Academic Secretary:

**Ander Ramos**

Tecnalia

June 24: Introduction to Neurotechnology

**Rafael Yuste**

**Alvaro Pascual-Leone**

**José Carmena**

June 25: Neurotechnology in the lab

**Botond Roska**

Basel

**Ed Boyden**

MIT

Panel: **Rafael Yuste** moderates

June 26: Neurotechnology in the clinic

**Grégoire Courtine**

Laussane

**Jocelyne Bloch**

Laussane

Panel: **Pascual-Leone** moderates

June 27: Neurotechnology in the market

**Ana Maiques**

Neuroelectrics

**Carolina Aguilar**

Inbrain

Panel: **José Carmena** moderates

June 28: Ethical and societal challenges

**Rafael Yuste**

**Alvaro Pascual-Leone**

**José Carmena**

Panel: **Ander Ramos** moderates