



## Neuroscience data integration through use of digital brain atlases

ZOOM – September 21-22, 2023

This two-day course will provide a hands-on introduction to three-dimensional reference atlases for the human, rat and mouse brain, and demonstrate how such atlases can be utilized to integrate and analyze heterogeneous neuroscience data. Students will gain updated knowledge about current approaches to assigning anatomical location to experimental data from the brain, and acquire basic skills in associated analytic tools. Invited speakers, **Timo Dickscheid**, **Nicola Palomero-Gallagher**, and **Menno Witter** will give an overview of human and rodent brain anatomy, and instruct on the use of interactive tools for inspecting multimodal and multiresolution brain atlases. **Jan Bjaalie**, **Trygve Leergaard** and co-workers from the Neural Systems Laboratory (University of Oslo) will introduce new concepts for data integration and development of murine brain atlas resources established in context of the European Human Brain Project.

### September 21:

**09:00-09:15 INTRODUCTION (Trygve Leergaard, Ingvild Bjerke)**

**09:15-10:00 SESSION 1: Concepts for sharing and integration of neuroscience research data (Jan Bjaalie)**

**10:00-10:15 SHORT BREAK**

**10:15-12:00 SESSION 2: Navigating the human brain (Nicola Palomero-Gallagher)**

**12:00-13:00 LUNCH BREAK**

**13:00-14.30 SESSION 3: Navigating the rodent brain (Menno Witter)**

**14:30-14:45 SHORT BREAK**

**14:45-15:55 SESSION 4: Introduction to EBRAINS digital brain atlas resources (Timo Dickscheid)**

**15:55-16:00 CLOSURE DAY 1**

## **September 22:**

**09:00-10:00 SESSION 5: Sharing and assigning location parameters to murine data (Ingvild Bjerke, Maja Puchades)**

**09:45-10:00 SHORT BREAK**

**10:00-11:00 SESSION 5, continued**

**10:15-10:30 SHORT BREAK**

**10:30-11:30 SESSION 7: Advanced and automated image registration (Harry Carey, Maja Puchades)**

**11:30-12:00 SESSION 8: Quantification of experimental murine image data**

**12:00-13:00 LUNCH BREAK**

**13:00-13:45 SESSION 8: Continued (Sharon Yates)**

**13:45 - 14:00 SHORT BREAK**

**14:00-15:00 Session 9: Quantify and Visualize data points in 3D (Sharon Yates / Ingvild Bjerke)**

**15:00-15:15 SHORT BREAK**

**15:15-15:45 SESSION 10: Visions of data integration in the future (Jan Bjaalie)**

**15:45-16:00 CLOSURE DAY 2: Evaluation and preparation for exam task (Trygve Leergaard)**