biobank uk
Imaging study

POPULATION BRAIN IMAGING
UK BIOBANK

A TALK BY
STEPHEN SMITH

WIN - FMRIB
UNIVERSITY OF OXFORD

6
GIUGNO
14:30
**AULA SEMINARI VIMM
FONDAZIONE RICERCA
BIOMEDICA AVANZATA**
VIA ORUS, 2
PADOVA

Medical imaging has enormous potential for early disease prediction, but is impeded by the difficulty and expense of acquiring data sets before symptom onset. UK Biobank aims to address this problem directly by acquiring high-quality, consistently acquired imaging data from 100,000 predominantly healthy participants, with health outcomes being tracked over the coming decades. The brain imaging includes structural, diffusion and functional modalities. Along with body and cardiac imaging, genetics, lifestyle measures, biological phenotyping and health records, this imaging is expected to enable discovery of imaging markers of a broad range of diseases at their earliest stages, as well as provide unique insight into disease mechanisms. I will give an overview of UK Biobank brain imaging, and present results derived from the first 21,000 participants' data. This includes rich sets of associations with non-imaging variables and genetics.

STEPHEN SMITH is Professor of Biomedical Engineering and head of the Analysis Group at WIN/FMRIB. FMRIB's Analysis Group, which he started in 1997, now comprises about 30 research fellows, postdocs, students and staff, carrying out functional and structural brain image analysis and statistics research. The group has produced the brain image analysis software package FSL (FMRIB Software Library) which is widely used in many laboratories across the world. Recent personal research has concentrated on resting state networks, showing that these correspond closely to explicit functional networks as seen in task FMRI, showing new networks on the basis of distinct temporal dynamics, and relating functional networks to behaviour and lifestyle. Currently, the FMRIB Analysis Group is playing a major role in the Human Connectome Project, UK Biobank Imaging, and the Developing Human Connectome Project.

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