ECR Workshop hosted by MQ & DATAMIND
in partnership with Mental Health Platform

Proteomics and Mental Health:

Using Large-scale Population-based Plasma Proteomic Data to Examine Causal Mechanisms and Blood-based Biomarkers for Mental Health Conditions

9th October 2025
12:00 - 17:00

Edinburgh Futures Institute, The University of Edinburgh
Room 4.55, 1 Lauriston Place Edinburgh EH3 9EF

Time	Topic
12:00 - 13:00	*Arrival and Lunch*
13:00 - 13:30	**Introduction: Proteomics in mental health science: opportunities and challenges** Prof Golam Khandaker
13:30 - 13:40	*Break*
13.40 - 15.10	**Session 1: Proteomic Biomarkers of Psychiatric Conditions (Margelyte and Dardani)**
13.40 - 14.10	**Lecture: Investigating proteomic biomarkers for mental health outcomes using large-scale population-based data** Dr Ruta Margelyte (20 mins lecture, 10 min Q&A)
14.10 - 15.10	**Practical exercise including Q&A: Proteomics, How?: data preparation, statistical approach, data visualisation, and interpretation** Facilitators: Dr Ruta Margelyte and Dr Christina Dardani
15.10 - 15.30	*Break*
15.30 - 17.00	**Session 2: Proteomic Biomarkers to causal mechanism (Shen and Dardani)**
15.30 - 16.00	**Lecture: Identifying causal protein markers to psychiatric conditions using Mendelian Randomisation** Dr Xueyi Shen (20 mins lecture, 10 min Q&A)
16.00 - 17.00	**Practical exercise including Q&A: Preparing pQTL data, using Mendelian Randomisation, and introduction to drug target identification** Facilitators: Dr Xueyi Shen and Dr Christina Dardani

SPEAKERS

Prof Golam Khandaker is Professor of Psychiatry and Immunology at Bristol Medical School, Head of Immunopsychiatry Programme at the MRC Integrative Epidemiology Unit, and Honorary Consultant Psychiatrist at the Avon and Wiltshire Mental Health Partnership NHS Trust.

Golam's research focuses on identifying and validating novel immunological mechanisms and potential treatment targets for major psychiatric disorders particularly depression and schizophrenia using epidemiological cohort and genetic analyses applied to large-scale population-based cohort/biobank, genomic, proteomic data, and early-phase clinical trials of immunomodulatory drugs in people with depression and psychosis.

Dr Xueyi Shen is a Senior Research Fellow at the University of Edinburgh.

Her research mainly involves leveraging multi-omic data to understand major psychiatric conditions, to unveil the mode of action of medications, and to identify risk and protective environmental factors that could influence psychiatric symptoms. She leads large-scale, international consortium studies in the Psychiatric Genomics Consortium and the ENIGMA consortium. She is a member of the steering committee of the Association for Complex Trait Genetics in Scotland, an editorial board member of Scientific Reports, and a member of the International Society of Psychiatric Genetics.

Dr Ruta Margelyte is a Senior Research Associate at the MRC Integrative Epidemiology Unit at the University of Bristol, working with the Immunopsychiatry group.

She specialises in medical statistics, epidemiology, and population proteomics with a focus on mental health outcomes. Ruta applies advanced statistical methods in large cohort studies, integrating proteomic and phenotypic data to identify biomarkers and investigate biological pathways involved in psychiatric conditions.

Dr Christina Dardani is a Senior Researcher at the Norwegian Institute of Public Health, and Honorary Senior Research Associate at the MRC Integrative Epidemiology Unit at the University of Bristol.

She specialises in mental health classical and genetic epidemiology. Christina applies genetic causal inference methods to large-scale population-based and multi-omics data (mainly genomic and proteomic) to interrogate possible causal mechanisms and novel drug targets for major neuropsychiatric conditions, and shared mechanisms for comorbid physical and psychiatric conditions.

NIPH
Norwegian Institute of Public Health