

INFRAFRONTIER CONFERENCE 2026

Agenda

23-24 June 2026

Consiglio Nazionale delle Ricerche Headquarters (CNR), Rome, Italy

DAY 1 – 23 June 2026

8:30 – 9:00 **Registration and Welcome Coffee**

Welcome

09:00 Prof. Francesco Dotta, Director of the Department of Biomedical Sciences of the CNR

09:10 **Opening Remarks**

Prof. Johannes Beckers, Scientific Director of INFRAFRONTIER ERIC

SESSION I: DATA ANNOTATION AND FUNCTIONAL ONTOLOGIES

09:20 – 12:00

Chaired by Dr. Rafaele Matteoni, IBBC-CNR

National Wide Infrastructure of Bioresource and Data in the Era of AI, Korea, a Story in Preclinical Platform for Infectious Disease

09:20

Prof. Je Kyung Seong, Director of the Korea Model Animal Priority Centre (KMPC), Seoul National University

Epigenetic Legacy: The Role of Sperm miRNAs in the Paternal Inheritance of Diabetes and Obesity Development

9:50

Katharina Laurent, Helmholtz Munich

T-cell Workflow for Immunotherapy Safety and Tumour Response Optimisation via Integrated Discovery – a Regulatory-grade NAM for Decoding the Pathogenic TCR-antigen Landscape

10:10

Dr. Raj Sewduth, VIB KU Leuven Centre for Cancer Biology

10:30 – 11:00

Coffee Break

Towards Controlling and Imaging Stem Cell Differentiation One Cell at a Time in Organoids

11:00

Prof. Virgile Viasnoff, Centre National pour la Recherche Scientifique (CNRS)

Advanced Behaviour Phenotyping for Neurogenetic and Preclinical Studies in the Laboratory Mouse

11:30

Dr. Vivek Kumar, The Jackson Laboratory

12:00 – 13:20

Lunch & Posters

13:20 – 14:00 **Panel discussion - Databases, AI, and Digital Twins: Current Applications and Future Directions for AI in Research**

Dr. Helen Parkinson, European Bioinformatics Institute, EMBL-EBI
 Dr. Sabine Hölter-Koch, Helmholtz Munich
 Dr. Graziano Pesole, Italian National Research Council
 Dr. Stefano Gaburro, Digital Preclinical Society, Cambridge, MA, USA

Moderated by

Prof. Johannes Beckers, Scientific Director of INFRAFRONTIER ERIC
 Dr. Silvia Mandillo, Institute of Biochemistry and Cell Biology, Italian National Research Council

SESSION II: DATABASES AS ENGINES OF FUNCTIONAL GENOMICS

14:00 – 17:00

Chaired by Dr. Anna Moles, IBBC-CNR

IMPC as a Foundational Dataset for Understanding Human Disease

14:00

Dr. Helen Parkinson, European Bioinformatics Institute, EMBL-EBI

Functional Annotation of the Mouse Non-Coding Genome for Understanding Human Diseases

14:30

Dr. Naoki Kubo, Director of the Transcriptome and Epigenome Research Team at RIKEN BioResource Research Center (BRC)

Exploring Large-scale Mouse Phenomic Data to Better Understand Genetic Underpinnings of Neuropsychiatric Disorders

15:00

Dr. Sabine Hölter-Koch, Helmholtz Munich

A Standardised Mouse Schema and Integrated Analysis Tool for Genotype-Phenotype Associations

15:20

Dr. Pilar Cacheiro, Queen Mary University of London

15:40 – 16:00

Coffee Break

FAIR and AI-ready Image Data Resources at Euro-BioImaging

16:00

Dr. Claudia Pfander, Euro-BioImaging

scATLAS Approaches and Multimodal Data Integration for Robust Annotation of the Immune System in Preclinical Models

16:20

Dr. Herve Luche, PHENOMIN-CIPHE INSERM

Data Welfare is Animal Welfare: Leveraging the FAIR3R Initiative and WELLFAIR Concept

16:40

Dr. Benoit Petit-Demoulière, Centre National pour la Recherche Scientifique (CNRS)

19:30

Social Dinner

DAY 2 - 24 June 2026

08:50 – 9:10 **Welcome coffee & Networking**

SESSION III: MECHANISTIC IN SILICO DISEASE MODELING AND PREDICTIVE MEDICINE

09:10 – 12:00

Chaired by Dr. Tania Sorg, PHEN-ICS

AI in Human Genetics: Enhancing Discovery and Mapping Disease Mechanisms

09:10

Dr. Francesco Paolo Casale, Helmholtz Munich & Faculty of Informatics, Technical University of Munich

From Cells to Chips to Digital Twins: Statistically Sound Parameter Estimation for Agent-Based Models in Organ-on-Chip and Cancer-on-Chip Systems

09:40

Prof. Andrea de Gaetano, Coordinator, CNR IASI UOS at Università Cattolica, Policlinico Gemelli & Professor of Mathematical Statistics, Dept. of Mathematics, Mahidol University

10:10 – 10:40

Coffee Break

Leveraging Mathematical Model to Advance Vaccination Against SARS-CoV-2: Using Virtual Mice Cohorts

10:40

Dr. Anne-Andrée Ruiz, Bordeaux Population Health Research Centre, Université de Bordeaux & Vaccine Research Institute, Université Paris-Est Créteil, Faculté de Médecine

Designing Biological Molecules with Generative AI: from RNA Structure to Synthesizable Drugs

11:00

Prof. Pietro Liò, Department of Computer Science and Technology, Cambridge Centre for AI in Medicine, University of Cambridge

Towards AI-Generated Virtual Control Groups in Preclinical Research: Insights from the IHI VICT3R Project

11:30

Dr. Davide Cirillo, Barcelona Supercomputing Centre

12:00 – 13:30

Lunch & Posters 2

SESSION IV: ANIMAL MODELS TO DIGITAL HUMAN DISEASES

13:30 – 14:30

Chaired by Dr. Ana Zarubica, PHENOMIN-CIPHE INSERM

From Brain Maps to Brain Twins

13:30 Dr. Viktor Jirsa, Chief Science Officer at EBRAINS, Aix Marseille University

Multiscale Modeling of Hippocampal CA1 Networks

14:00 Dr. Rosanna Migliore, Institute of Biophysics, Italian National Research Council

SESSION V: ETHICAL, REGULATORY AND REPRODUCIBILITY CHALLENGES

14:30 – 16:00

Chaired by Dr. Lluís Montoliu, CNB-CSIC

Beyond Modelling: The Future of Regulatory Evidence in Pharmaceutical Innovation

14:30 Dr. Gianluca Sferrazza, Italian National Research Council, Biomedical Science Department

Supporting NAMs Innovation: Why Standardisation and Validation Matter!

15:00 Dr. Monica Piergiovanni, NAM expert, Former European Commission, Joint Research Centre (JRC)

Beyond Replacement: Transparent Integration and Communication of NAMs and Animal Research

15:30 Dr. Inês Serrenho, European Animal Research Association
Dr. Marcello Raspa, Institute of Biochemistry and Cell Biology, Italian National Research Council (CNR)

16:00 – 16:10 **Closing remarks**

16:10 *Coffee & Networking*

