

**GEMMA** – is an interdisciplinary consortium of international researchers in order to further the understanding of Autism Spectrum Disorder and its possible treatment/prevention.

**GEMMA** combines a multiomic approach with robust environmental data to exploit the analysis of the composition and function of the microbiome for personalized treatment and, ultimately, disease interception in at-risk infants.



This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement **N. 825033**



**G E M M A**

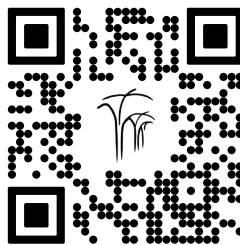
Multi-Omics Research in Autism

**3<sup>RD</sup> ANNUAL  
MEETING  
MAY 19-20  
2022**

**FONDAZIONE EBRIS**  
Via S. De Renzi 50, 84125 Salerno

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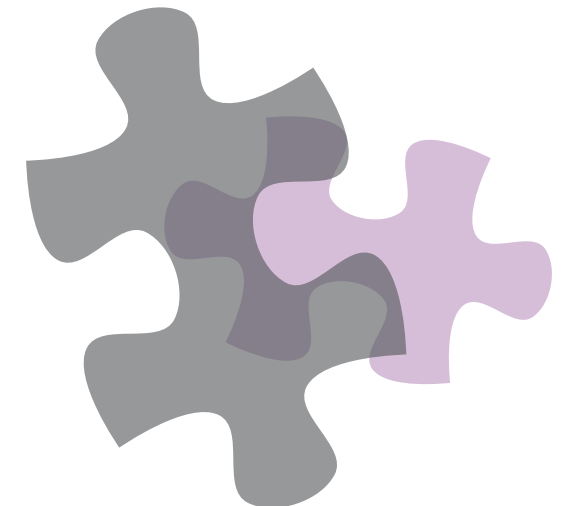
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## PROGRAM

### DAY 1

9.00–9.15

#### WELCOME

**Alessio Fasano** *Fondazione EBRIS*

9.15–9.35

#### WP1\_ MECHANISTIC PATHWAY HYPOTHESES

The theoretical qualitative model of ASD pathogenesis mechanism that has been formulated and the planned next steps for its biological validation and finalisation

**Thanos Beopoulos, François Iris** *BM Systems*

9.35–9.45 **OPEN DISCUSSION**

9.45–10.05

#### WP2\_ MICROBIOME, GENOME & EPIGENOME PROFILING

Process improvement and genomic analysis with the first GEMMA samples

**Christophe Roos** *Eufomatics*

10.05–10.15 **OPEN DISCUSSION**

10.15–10.35

Process improvement for epigenome analysis

**Christine Ladd-Acosta** *John Hopkins University*

10.35–10.45 **OPEN DISCUSSION**

10.45–11.00 **COFFEE BREAK**

11.00–11.20

Analyzing the host microbiota: metagenomic and metatranscriptomic

**Emmanuelle Le-Chatelier** *INRAE*

11.20–11.30 **OPEN DISCUSSION**

11.30–11.50

#### WP3\_ METABOLOME, PROTEOME , GLYCOME & IMMUNE FUNCTION PROFILING

The metabolome characterization in GEMMA

**Jeremy Nicholson, Elaine Holmes** *Imperial College London*

11.50–12.00 **OPEN DISCUSSION**

12.00.12.20

Fecal metabolome profiling in GEMMA: perspectives from ongoing investigation

**Martina Lombardi** *Theoreo*

12.20.12.30 **OPEN DISCUSSION**

12.30.12.50

The proteome characterization in GEMMA

**Serguei Fetissov** *Inserm*

12.50.13.00 **OPEN DISCUSSION**

13.00–14.00 **LIGHT LUNCH**

14.00–14.20

The glycome characterization in GEMMA

**Stephen Cunningham** *National University of Ireland Galway (NUIG)*

14.20–14.30 **OPEN DISCUSSION**

14.30.14.50

The immune profile characterization in GEMMA

**Dario Siniscalco** *Fondazione EBRIS*

14.50–15.00 **OPEN DISCUSSION**

15.00–15.20

#### WP4\_ MULTI-OMICS ANALYSIS

The GEMMA multi-omics platform and how it is planned to be used in the interventional trial

**Reija Autio** *University of Tampere*

15.20–15.30 **OPEN DISCUSSION**

15.30–15.50

A graph-based proposal for multi-omics data integration

**Antonio Giorgi** *Medinok*

15.50–16.00 **OPEN DISCUSSION**

16.00–16.20

#### WP5\_ PRE-CLINICAL TRIALS

The outcomes of the FMT experiments conducted at INRAE

**Léa Roussin\*, Laurent Naudon, Sylvie Rabot** *INRAE*

\* presenter

16.20–16.30 **OPEN DISCUSSION**

16.30–16-45 **COFFEE BREAK**

16.45–17.05

The outcomes of the FMT experiments conducted at UU

**Naika Prince\*, Lucia Peralta Marzal, Paula Perez Pardo,**

**Aletta Kraneveld** *Universiteit Utrecht*

\*presenter

17.05–17.15 **OPEN DISCUSSION**

17.15–17-35

The outcomes of the in vitro fermentation experiments on testing ingredients (pre-, pro- and synbiotics) to study the impact on metabolic changes and microbiota composition

**Guus Roeselers, Kumar Himanshu** *Nutricia Research*

17.35–17.45 **OPEN DISCUSSION**

17.45–18.05

The planned preclinical intervention studies

**Lucia Peralta Marzal\*, Naika Prince, Paula Perez Pardo,**

**Aletta Kraneveld** *Universiteit Utrecht*

**Laurent Naudon, Sylvie Rabot\*** *INRAE*

\* presenter

18.05–18.15 **OPEN DISCUSSION**

18.15–19.00

#### LECTIO

The mechanistic role of human gut microbiome in the pathogenesis of ASD: the FMT experience

**James Adams**

### DAY 2

10.00–11.00

#### WP6\_ CLINICAL TRIALS

The recruiting process in the US, Ireland and Italy: how the recruiting centers are working to recover the time lost for patients' recruitment due to the pandemic

**Giulio Corrivetti** *ASL*

**Dario Siniscalco** *Fondazione EBRIS*

**Geraldine Leader** *National University of Ireland Galway*

**Ayesha Zahrah, Sarah Kadzielski** *MassGeneralHospital*

11.00–11.15 **OPEN DISCUSSION**

11.15–11.30 **COFFEE BREAK**

11.30–11.50

The necessary steps to be implemented for the interventional trials.

**Alessio Fasano** *Fondazione EBRIS*

**Guus Roeselers, Kumar Himanshu** *Nutricia Research*

11.50–12.00 **OPEN DISCUSSION**

12.00–12.20

#### WP7\_ COMMUNITY BUILDING & PROJECT DISSEMINATION

Dissemination and Communication activities, the achieved goals and the planned effort in supporting the GEMMA ecosystem

**Alessandra Mezzelani** *CNR*

12.20–12.30 **OPEN DISCUSSION**

12.30–12.50

#### WP8\_ EXPLOITATION, STANDARDIZATION & UPSCALING

How we are developing the GEMMA exploitation strategy

**Antonio Giorgi** *Medinok*

12.50.13.00 **OPEN DISCUSSION**

13.00–14.30 **LIGHT LUNCH**

14.30–15.15

#### LECTIO

Autism and metabolomic profiling: the state of the art and the most recent scientific advances

**Jeremy Nicholson**

15.15–16.15

**OPEN DISCUSSION WITH THE GEMMA SAB**

19.30 **GALA DINNER**

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