5th T21RS International Conference

Promoting Research Excellence in Down Syndrome

Rome, Italy
June 5–8 2024

Preliminary Scientific Program
### Wednesday, 5 June 2024

**Sapienza University of Rome**

<table>
<thead>
<tr>
<th>Time</th>
<th>Aula Magna - Rettorato</th>
<th>Aula Magna - Lettere</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 AM – 06:00 PM</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>09:00 AM – 10:40 PM</td>
<td>Satellite Symposium 1</td>
<td>Satellite Symposium 2 Clinical committee</td>
</tr>
<tr>
<td>10:40 AM – 11:05 AM</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>11:05 AM – 12:35 PM</td>
<td>Satellite Symposium 1 Preclinical committee</td>
<td>Satellite Symposium 2 Clinical committee</td>
</tr>
<tr>
<td>12:35 PM – 02:00 PM</td>
<td>Lunch break</td>
<td></td>
</tr>
<tr>
<td>02:00 PM – 03:00 PM</td>
<td>T21RS General Assembly</td>
<td></td>
</tr>
<tr>
<td>03:00 PM – 05:00 PM</td>
<td>Symposium 1 Beyond the gene-dosage hypothesis in trisomy 21</td>
<td>Symposium 2 From fetus to old age</td>
</tr>
<tr>
<td>05:00 PM – 05:30 PM</td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>05:30 PM – 07:00 PM</td>
<td>Opening ceremony</td>
<td></td>
</tr>
<tr>
<td>07:00 PM</td>
<td>Welcome reception</td>
<td></td>
</tr>
</tbody>
</table>

**www.t21rs2024.com**
09:00 AM - 10:40 AM **Satellite 1 by Preclinical committee: Model Strengths and Limitations**
*Chairs: Frances Wiseman, UK; Randall Roper, USA*

Introduction by the chairs

*C. Elegans*
*Author: Jon Pierce, USA*

*D. Melanogaster*
*Author: Bing Ye, USA*

*Zebrafish*
*Author: Summer Thyme, USA*

*iPSCs & organoids.*
*Author: Aoife Murry, UK*

10:40 AM - 11:05 AM **Coffee break**

11:05 AM - 11:55 AM **Model Strengths and Limitations**

New Rodent models.
*Authors: Eugene Yu, USA*

Human post-mortem material.
*Authors: Sylvia Pérez, USA*

Panel discussion, all speakers

12:35 PM - 02:00 PM **Lunch break**

02:00 PM - 03:00 PM **T21RS General Assembly**

03:00 PM - 05:00 PM **Symposium 1: Beyond the gene-dosage hypothesis in trisomy 21**
*Chair: María del Mar Dierssen Sotos, Spain*

The topological chromatin remodeling in trisomy 21
*Author: Stylianos Antonarakis, Switzerland*
Gene dosage in four dimensions: insights from the spatiotemporal deconvolution of copy number variations in human neurodevelopment
Author: Giuseppe Testa, Italy

Epigenetic mechanisms contributing to cognitive deficits in Down syndrome
Author: César Sierra, Switzerland

Contribution of retrotransposition to Down syndrome
Author: María Martínez de Lagrán, Spain

05:00 PM - 05:30 PM Coffee break

05:30 PM - 07:00 PM Opening Ceremony
10 Years of promoting excellence in Down syndrome research. Welcome messages from T21RS President, Institutions and stakeholders

07:00 PM Welcome Reception at Rettorato Terrace

Aula Magna - Lettere - Sapienza University of Rome

09:00 AM - 10:40 AM Satellite 2 by Clinical committee
Chairs: Brian Skotko, USA; Alberto Costa, USA

Introduction by the chairs
Managing healthy lifestyles in individuals with Down syndrome.
Author: Nicolas M. Oreskovic, USA

Down Syndrome Clinic to You: a new platform bringing healthcare information to families around the globe.
Author: Brian Skotko, USA

Clinical evaluation, treatment, and support for patients with Down syndrome and Alzheimer’s disease.
Author: Stephanie Santoro, USA

10:40 AM - 11:05 AM Coffee break
11:05 AM - 12:05 PM  **Satellite 2 by Clinical committee**

Emerging pharmacological and immunological strategies to treat Alzheimer’s disease in persons with DS.
*Author: Michael S. Rafii, USA*

The development and onset of neurodegeneration in people with Down syndrome—the spectrum.
*Author: Shahid Zaman, UK*

Potential challenges and barriers to implement recently approved pharmacological strategies to treat Alzheimer’s disease in the general population to persons with DS
*Author: Alberto Costa, USA*

12:35 PM - 02:00 PM  **Lunch break**

03:00 PM - 05:00 PM  **Symposium 2: From fetus to old age: advanced neuroimaging biomarkers and their predictive power for cognitive outcomes across the lifespan in Down Syndrome**

*Chair: Abi Fukami – Gartner, UK*

Exploring structural brain development in fetuses with Down syndrome using state-of-the-art in utero magnetic resonance imaging
*Author: Abi Fukami – Gartner, UK*

Frontal lobe structure and function in youth with Down syndrome: Lessons from magnetic resonance imaging, diffusion tensor imaging, and functional near-infrared spectroscopy
*Author: Nancy Raitano Lee, USA*

Advanced diffusion magnetic resonance imaging modelling: dissecting white matter changes in Down syndrome and Alzheimer’s disease
*Author: Fedal Saini, UK*

White matter alterations in early Huntington’s disease
*Author: Herminia Diana Rosas, USA*

05:00 PM - 05:30 PM  **Coffee break**

07:00 PM  **Welcome Reception at Rettorato Terrace**
<table>
<thead>
<tr>
<th>Time</th>
<th>Plenary Room</th>
<th>Room 1</th>
<th>Room 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 AM – 06:00 PM</td>
<td>Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 AM – 11:00 AM</td>
<td>Coffee break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00 AM – 11:45 AM</td>
<td>The EMBO Keynote Lecture John Hardy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:45 AM – 01:45 PM</td>
<td>Lunch &amp; Poster presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:45 PM – 03:15 PM</td>
<td>Industry Session</td>
<td>NANO-S1: Young Investigators</td>
<td>NANO-S2: Young Investigators</td>
</tr>
<tr>
<td>03:15 PM – 04:00 PM</td>
<td>Keynote 2: Anita Bhattacharyya</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04:00 PM – 04:30 PM</td>
<td>Coffee break</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
08:30 AM - 10:30 AM  Symposium 3: Alzheimer's disease in Down syndrome: Updates on Natural History, Biomarkers and Clinical Trials  
Chairs: Sharon J. Krinsky-Mchale, USA; Michael Rafii, USA

Recent Advances in Understanding AD Biomarkers in DS  
Authors: Juan Fortea, Spain; Beau Ances, USA

Clinical Trials for AD in DS  
Authors: Sarah Walter; Michael Rafii, USA

Characterizing cognitive decline in Alzheimer’s disease in adults with Down syndrome Results from the ABC-DS and DABNI cohort study  
Authors: Sharon J. Krinsky-Mchale, USA; Laura Videla Toro, Spain

Imaging Biomarkers of Alzheimer’s Disease and their Relation to Cognitive  
Authors: Sigan L. Hartley, USA; Patrick Lao, USA

10:30 AM - 11:00 AM  Coffee break  ☕️

11:00 AM - 11:45 AM  The EMBO Keynote Lecture  
John Hardy, UK

11:45 AM - 01:45 PM  Lunch break & Poster presentations  🔍

01:45 PM - 03:15 PM  Industry Session

03:15 PM - 04:00 PM  Keynote 2  
Anita Bhattacharyya, USA

04:00 PM - 04:30 PM  Coffee break  ☕️

04:30 PM - 06:30 PM  Symposium 6: Is gene therapy a perspective in Down syndrome?  
Chair: Prof. Antonella Izzo, Italy

Thursday, 6 June 2024
In vivo gene therapy and genome editing with AAV vectors  
*Author: Alberto Auricchio, Italy*

Normalizing the expression of Has21 genes to elucidate their role in Down syndrome pathogenesis  
*Author: Antonella Izzo, Italy*

Development of gene therapy for intellectual disabilities in Down syndrome using new genome editing technologies  
*Author: Yasuji Kitabatake, Japan*

A dynamic in vitro model of Down Syndrome neurogenesis with Trisomy 21 gene dosage correction  
*Author: Stefan F. Pinter, USA*

---

**Room 1 - Roma Convention Center ‘La Nuvola’**

**08:30 AM - 10:30 AM**  
**Symposium 4: Heart Development and Disease in Down Syndrome**  
*Chair: Ivan Moskowitz, USA*

- Modelling cardiomyocyte development using Down syndrome human induced pluripotent stem cells  
  *Author: Andreia Sofia Bernardo, UK*

- Mechanisms of altered cardiac differentiation control in Trisomy 21 human induced pluripotent stem cells  
  *Author: Ivan Moskowitz, USA*

- Cardiac Progenitor Development in Organoid Models  
  *Author: Chulan Kwon, USA*

- Congenital heart defects in Down syndrome mice are caused in part by increased dosage of DYRK1A  
  *Author: Victor Tybulewicz, UK*

**10:30 AM - 11:00 AM**  
Coffee break

**11:45 AM - 01:45 PM**  
Lunch break & Poster presentations

**01:45 PM - 03:15 PM**  
**NANO - S1: Young Investigators**
**Symposium 7: Metabolic health in persons with Down syndrome: causes, consequences, and treatment**

*Chair: Lauren Ptomey, USA*

Biochemical markers of metabolic health in persons with Down syndrome – data from Go-DS21  
*Author: Leda Bianchi, UK*

The role of physical activity and systemic inflammation in Alzheimer’s disease in Down syndrome  
*Author: Victoria Fleming, USA*

Weight loss interventions for adolescents and adults with Down syndrome  
*Author: Lauren Ptomey, USA*

Remote exercise for the promotion of physical activity and cardiovascular health in adults with Down syndrome  
*Author: Amy Bodde, USA*

---

**Room 2 - Roma Convention Center ‘La Nuvola’**

**Symposium 5: The relationship between sleep, epilepsy and cognition in Down Syndrome**

*Chairs: María Carmona-Iragui, Spain; Sandra Giménez, Spain; Renata Bartesaghi, Italy*

Sleep disturbances and behavioral profiles in children and adolescents with Down syndrome  
*Author: Stefano Vicari, Italy*

Impact of obstructive sleep apnea on sleep architecture, epilepsy, and Alzheimer’s Disease biomarkers  
*Author: Sandra Giménez, Spain*

Diagnosis and treatment of late-onset myoclonic epilepsy in Down syndrome (LOMEdS)  
*Authors: María Carmona-Iragui, Spain; Fedele Dono, Italy*

Mechanisms and outcome of sleep disruption in Down Syndrome: insight from mouse models  
*Authors: Charles Hoeffer; Chiara Berteotti, USA*
10:30 AM - 11:00 AM  Coffee break

11:45 AM - 01:45 PM  Lunch break & Poster presentations

01:45 PM - 03:15 PM  NANO - S2: Young Investigators

04:00 PM - 04:30 PM  Coffee break

04:30 PM - 06:30 PM  Symposium 8: Hematopoietic Dysregulation in People with Down syndrome
Chair: Edward Evans Jr., USA

Too much and too little: how does an extra chromosome 21 initiate leukemia and hematopoietic dysfunction before birth in children with Down syndrome?
Author: Irene Roberts, UK

Let’s have a ‘Tête-à-Tête’: Clonal Hematopoiesis in People with Down Syndrome
Author: Edward Evans Jr., USA

From Down syndrome to a potential treatment of leukemia and prostate cancer
Author: Shai Izraeli, Israel

Germline susceptibility factors associated with risk of leukemia in Down syndrome
Author: Karen Rabin, USA
<table>
<thead>
<tr>
<th>Time</th>
<th>Plenary Room</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Families Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 AM – 06:00 PM</td>
<td>Registration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30 AM – 11:00 AM</td>
<td></td>
<td></td>
<td></td>
<td>Coffee break</td>
</tr>
<tr>
<td>11:00 AM – 11:45 AM</td>
<td>Keynote 3 Kelly Sullivan</td>
<td></td>
<td></td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>11:45 AM – 01:45 PM</td>
<td>Lunch &amp; Poster presentations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:45 PM – 03:15 PM</td>
<td>NANO-S3 Young Investigators</td>
<td>NANO-S4 Young Investigators</td>
<td>Workshop 1 Developing data ecosystems for collaborative Down syndrome research</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>03:15 PM – 04:00 PM</td>
<td>Keynote 4 Award Keynote Lecture Montserrat Trueta</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04:00 PM – 04:30 PM</td>
<td></td>
<td></td>
<td></td>
<td>Coffee break</td>
</tr>
<tr>
<td>04:30 PM – 06:30 PM</td>
<td>Symposium 12 The role of DYRK1A in Down syndrome and related comorbidities: what is new</td>
<td>Symposium 13 Clinical and Neurodiagnostic Biomarkers in Down Syndrome Regression Disorder</td>
<td>Symposium 14 Liver Dysfunction in Down Syndrome</td>
<td>Parallel Program for Families</td>
</tr>
</tbody>
</table>
**Symposium 9: Rodent Models of Down Syndrome: Present and Future Considerations**
*Chair: Randall Roper, USA*

- Sex differences in mouse models recapitulate those seen in humans with DS  
  *Author: Randall Roper, USA*
- New insights into rodent models of DS – what exactly is the prenatal phenotype?  
  *Author: Tarik Haydar, USA*
- Modeling Down syndrome using human mouse chimeras  
  *Author: Hiruy Meharena, USA*
- Environmental issues with mouse models  
  *Author: Mara Dierssen, Spain*
- The future of Down syndrome mouse models—where are we going?  
  *Author: Yann Herault, France*
- Panel Discussion—all speakers and chairs will participate in the panel  
  *Author: Frances Wiseman, UK*

**Coffee break**

**Keynote 3**
*Kelly Sullivan, USA*

**Lunch break & Poster presentations**

**NANO - S3: Young Investigators**

**Keynote 4**
*Award Keynote Lecture*  
*Montserrat Trueta, Spain*
SYMPOSIUM 12: The role of DYRK1A in Down syndrome and related comorbidities: what is new?
Chairs: Daniella Balduino Victorino, France; Laurent Meijer, UK

Elucidating the dose-dependent effects of DYRK1A on Alzheimer’s disease pathology in mice
Author: Daniella Balduino Victorino, France

Functional MRI in DS models: impact of DYRK1A inhibitors
Authors: Laura-Adela Harsan; Julien Caillete, France

DYRK1A/EGR1 pathway in vascular endothelial cells predispose to developing pulmonary arterial hypertension in Down syndrome
Author: Hidehiro Suginobe, Japan

Role of DYRK1A in trisomy 21 megakaryopoiesis
Author: Stella Chou, USA

DYRK1A & congenital heart defects in DS
Author: Laurent Meijer, UK

DYRK1A inhibitors restore pancreatic functions in animal model of diabetes
Author: Jamileh Movassat, France

ROOM 1 - Roma Convention Center ‘La Nuvola’

SYMPOSIUM 10: Cognitive Outcome Measures in Down syndrome Across the Lifespan
Chair: Laura del Hoyo Soriano, Spain

Understanding normative change in executive functioning
Author: Anna Esbensen, USA

Language Measures to Assess Treatment Efficacy
Author: Leonard Abbeduto, USA

Memory Measures in Down syndrome
Author: Hailey Van Vorce, USA

Cognitive measures in prodromal Alzheimer disease and Alzheimer disease Dementia in Down syndrome
Author: Laura del Hoyo Soriano, Spain
10:30 AM - 11:00 AM  Coffee break

11:45 AM - 01:45 PM  Lunch break & Poster presentations

01:45 PM - 03:15 PM  NANO - S4: Young Investigators

04:00 PM - 04:30 PM  Coffee break

04:30 PM - 06:30 PM  Symposium 13: Clinical and Neurodiagnostic Biomarkers in Down Syndrome Regression Disorder: Diagnostic and Therapeutic Implications
Chair: Jonathan Santoro, USA

Catatonia and Psychiatric Phenotypes in DSRD
Author: Cathy Franklin, Australia

Neurocognitive Disorder Differentiation in DSRD
Author: Diego Real de Asua, Spain

Diagnostic Work Up in DSRD: When and How Quickly to Perform
Author: Stephanie Santoro, USA

Therapeutics in DSRD: The Choice Between Immunotherapeutics and Psychotropics
Author: Jonathan Santoro, USA

Room 2 - Roma Convention Center ‘La Nuvola’

08:30 AM - 10:30 AM  Symposium 11: Understanding Alzheimer’s disease in Down syndrome using omics approaches on human biosamples
Chair: Cliona Farrell, UK; Lisi Flores-Aguilar, USA

AD-Related Lipid and Cellular Energy Dysmetabolism Occurs Early in People with Down Syndrome
Author: Mark Mapstone, USA

Decoding genetic and sporadic forms of Alzheimer’s Disease: A Multi-Layered Transcriptomic Odyssey
Author: Vivek Swarup, USA
Biofluid markers of Alzheimer’s disease-associated CNS inflammation in adults with Down syndrome
Author: Olivia Belbin, Spain

Proteomic analysis reveals increased Apolipoprotein E abundance in the Alzheimer’s disease–Down syndrome brain compared to early-onset AD
Author: Cliona Farrell, UK

10:30 AM - 11:00 AM Coffee break

11:45 AM - 01:45 PM Lunch break & Poster presentations

01:45 PM - 03:15 PM Workshop 1: Developing data ecosystems for collaborative Down syndrome research in the age of artificial intelligence
Moderator: Dr. Angelo Carfi, Italy

NIH perspective on international cohort development and data sharing
Author: Dr. Huiqing Li, USA

Assembly and analysis of multidimensional datasets in the INCLUDE Data Hub
Author: Dr. Joaquin Espinosa, USA

Multi-omics analysis of delayed development and early ageing in Down syndrome
Author: Dr. Micah Donovan, USA

Standard criteria for database development and application of machine learning-based approaches: an Italian pilot study
Author: Dr. Giuseppe Ramacieri, Italy

AI and medicine: the case study of the co-occurring conditions of Down syndrome
Author: Dr. Pietro Lió, UK

04:00 PM - 04:30 PM Coffee break

04:30 PM - 06:30 PM Symposium 14: Liver Dysfunction in Down Syndrome
Chair: Lauren Dunn, USA

Altered bile acid metabolism in Down syndrome
Author: Lauren Dunn, USA
Metabolic Dysregulation in Down Syndrome Mouse Models
Author: G. William Wong, USA

Novel insights from fetal and placental phenotyping in 3 mouse models of Down syndrome
Author: April Adams, USA

Nonalcoholic Fatty Liver Disease in Children with Down Syndrome
Author: Diletta Valentini, Italy

**Families Room - Roma Convention Center ‘La Nuvola’**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 AM - 10:30 AM</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>10:30 AM - 11:00 AM</td>
<td>Coffee break</td>
</tr>
<tr>
<td>11:00 AM - 11:45 AM</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>11:45 AM - 01:45 PM</td>
<td>Lunch break &amp; Poster presentations</td>
</tr>
<tr>
<td>01:45 PM - 03:15 PM</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>04:00 PM - 04:30 PM</td>
<td>Coffee break</td>
</tr>
<tr>
<td>04:30 PM - 06:30 PM</td>
<td>Parallel Program for Families</td>
</tr>
</tbody>
</table>
### Saturday, 8 June 2024

**Roma Convention Center ‘La Nuvola’**

<table>
<thead>
<tr>
<th>Time</th>
<th>Plenary Room</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Families Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 AM – 06:00 PM</td>
<td>Registration</td>
<td>Symposium 15 Immunomodulatory therapies in Down syndrome</td>
<td>Symposium 16 Understanding progeroid biology of Down syndrome throughout lifetime</td>
<td>Symposium 17 Interplay between Alzheimer’s disease and cerebrovascular pathology in individuals with Down syndrome</td>
</tr>
<tr>
<td>08:30 AM – 10:30 AM</td>
<td>Symposium 15 Immunomodulatory therapies in Down syndrome</td>
<td>Symposium 16 Understanding progeroid biology of Down syndrome throughout lifetime</td>
<td>Symposium 17 Interplay between Alzheimer’s disease and cerebrovascular pathology in individuals with Down syndrome</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>10:30 AM – 11:00 AM</td>
<td>Coffee break</td>
<td>NANO-S6 Young Investigators</td>
<td>NANO-S7 Young Investigators</td>
<td>Workshop 2 NIH and EU-funded projects</td>
</tr>
<tr>
<td>11:00 AM – 12:30 PM</td>
<td>Lunch &amp; Poster presentations</td>
<td>NANO-S6 Young Investigators</td>
<td>NANO-S7 Young Investigators</td>
<td>Workshop 2 NIH and EU-funded projects</td>
</tr>
<tr>
<td>12:30 PM – 01:30 PM</td>
<td>Lunch &amp; Poster presentations</td>
<td>NANO-S6 Young Investigators</td>
<td>NANO-S7 Young Investigators</td>
<td>Workshop 2 NIH and EU-funded projects</td>
</tr>
<tr>
<td>01:30 PM – 02:15 PM</td>
<td>Keynote 5 Miia Kivipelto</td>
<td>Science &amp; Society meeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02:15 PM – 03:30 PM</td>
<td>Science &amp; Society meeting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03:30 PM – 04:00 PM</td>
<td>Coffee break</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04:00 PM – 05:15 PM</td>
<td>Science &amp; Society meeting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05:15 PM – 06:15 PM</td>
<td>Closing ceremony</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:30 PM</td>
<td>Gala dinner &amp; awards at Palazzo Brancaccio</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
08:00 AM - 06:00 PM Registration

Plenary room - Roma Convention Center ‘La Nuvola’

08:30 AM - 10:30 AM Symposium 15: Immunomodulatory therapies in Down syndrome
Chair: Angela Rachubinski, USA

- The safety and efficacy of a JAK inhibitor for diverse clinical endpoints in Down syndrome
  Author: Angela Rachubinski, USA

- Multi-Omics approaches to dissect mechanisms of Down syndrome immune dysfunctions and vaccine responses
  Author: Susan Pereira Ribeiro, USA

- Immunomodulatory therapies in children with Down syndrome: a rheumatologist’s perspective
  Author: Jessica Bloom, USA

- In utero immune dysregulation in Down syndrome: implications for prenatal treatments
  Author: Joaquín Espinosa, USA

10:30 AM - 11:00 AM Coffee break

11:00 AM - 12:30 PM NANO - S6: Young Investigators

12:30 PM - 01:30 PM Lunch break & Poster presentations

01:30 PM - 02:15 PM Keynote 5
Miia Kivipelto

02:15 PM - 03:30 PM Science & Society meeting

03:30 PM - 04:00 PM Coffee break

04:00 PM - 05:15 PM Science & Society meeting

05:15 PM - 06:15 PM Closing ceremony

07:30 PM Gala dinner & awards at Palazzo Brancaccio
Room 1 - Roma Convention Center ‘La Nuvola’

08:30 AM - 10:30 AM  Symposium 16: Understanding progeroid biology of Down syndrome throughout lifetime  
Chairs: Maria Giulia Bacalini, Italy; Dean Nizetic, UK

Down syndrome in the Geroscience perspective: a focus on trajectories of epigenetic aging  
Author: Maria Giulia Bacalini, UK

Dissecting immune aging in people with DS  
Author: Bernard Khor, USA

Multi-system biological age of individuals with DS is increased from earliest childhood and dose imbalance of DYRK1A provides one of possible causative mechanisms  
Author: Dean Nizetic, UK

The DREAM complex regulates the DNA repair capacity of somatic tissues  
Author: Arturo Bujarrabal-Dueso, Germany

10:30 AM - 11:00 AM  Coffee break

11:00 AM - 12:30 PM  NANO - S7: Young Investigators

12:30 PM - 01:30 PM  Lunch break & Poster presentations

03:30 PM - 04:00 PM  Coffee break

07:30 PM  Gala dinner & awards at Palazzo Brancaccio

Room 2 - Roma Convention Center ‘La Nuvola’

08:30 AM - 10:30 AM  Symposium 17: Interplay between Alzheimer’s disease and cerebrovascular pathology in individuals with Down syndrome  
Chair: Lisi Flores Aguilar, USA

Blood-brain barrier pathophysiology in individuals with Down syndrome  
Author: Lisi Flores Aguilar, USA
The role of endothelial cells in maintaining the blood-brain barrier in Down syndrome and APPdup
*Author: Louis Valay, France*

Cerebrovascular dysfunction and Alzheimer’s disease pathogenesis in adults with Down syndrome
*Author: Adam M. Brickman, USA*

Fluid biomarkers for vascular cognitive impairment
*Author: Donna M. Wilcock, USA*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:30 AM - 11:00 AM</td>
<td>Coffee break ❖</td>
</tr>
<tr>
<td>11:00 AM - 12:30 PM</td>
<td>Workshop 2: NIH and EU-funded projects</td>
</tr>
<tr>
<td>12:30 PM - 01:30 PM</td>
<td>Lunch break &amp; Poster presentations ⌚️</td>
</tr>
<tr>
<td>03:30 PM - 04:00 PM</td>
<td>Coffee break ❖</td>
</tr>
<tr>
<td>07:30 PM</td>
<td>Gala dinner &amp; awards at Palazzo Brancaccio</td>
</tr>
</tbody>
</table>

**Families Room - Roma Convention Center ‘La Nuvola’**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:30 AM - 10:30 AM</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>10:30 AM - 11:00 AM</td>
<td>Coffee break ❖</td>
</tr>
<tr>
<td>11:00 AM - 12:30 AM</td>
<td>Parallel Program for Families</td>
</tr>
<tr>
<td>12:30 PM - 01:30 PM</td>
<td>Lunch break &amp; Poster presentations ⌚️</td>
</tr>
<tr>
<td>03:30 PM - 04:00 PM</td>
<td>Coffee break ❖</td>
</tr>
</tbody>
</table>
Organized by

Technical Secretariat