



## The Transformation of Medicine

First International Conference  
on Network Medicine and Big Data

A joint event with:

SAPIENZA INFORMATION-BASED  
TECHNOLOGY INNOVATION  
CENTER FOR HEALTH - STITCH



**SAPIENZA**  
UNIVERSITÀ DI ROMA



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VENUE:

**Sapienza University of Rome**

Dipartimento di Scienze  
odontostomatologiche e maxillo-facciali  
via Caserta 6, 00161 Roma

**BRIGHAM HEALTH**



**BRIGHAM AND  
WOMEN'S HOSPITAL**

SCIENTIFIC COMMITTEE:

**Sapienza University of Rome**

**Brigham and Women's Hospital  
Boston, MA (USA)**

September 24-26, 2018  
Via Caserta 6, Rome - Italy

# Programme

## Day 1. Genomics, Phenomics, Big Data and Machine Learning Essential for Network Medicine

8.15 am *Welcome*

**Joseph Loscalzo**, MD, PhD and Rector **Eugenio Gaudio**, MD.

8.30 am *Networks in Biology*

**Albert-Laszlo Barabasi**, PhD

9.30 am *Network Medicine: Diagnosis and Therapy of Disease*

**Joseph Loscalzo**, MD, PhD

10.30 am **Break**

10.50 am *Synchronization in Adaptive Networks*

**Guido Caldarelli**, MD

11.10 am *Graph-based Methods for Disease Gene Prediction*

Eng. **Paola Velardi**

11.30 am *Multiscaling in Network Medicine*

**Jan Baumbach**, PhD

11.50 am *Epigenetics in Network Medicine*

**Claudio Napoli**, MD, PhD

12.10 pm *Space Technologies and Global Health*

**Antoine Geissbuhler**, MD

12.30 pm *Key Nodes in Co-expression Networks:*

*from Grapevine to Cancer*

**Lorenzo Farina**, PhD

12.50 **Lunch**

1.40 pm *Diet and Network Medicine in Atherogenesis*

Professor **Linda Badimon Maestro**

2.00 pm *Transitions in Regulatory Networks*

**John Quackenbush**, PhD

2.20 pm *Articulation Points and Bridges in Complex Networks*

**Yang-Yu Liu**, PhD

2.40 pm *Complex Antithrombotic Regimens and Precision Medicine*

**Giovanni Di Minno**, MD

3.00-4.00 pm **Poster Session**

4.00-6.00 pm **Discussion and Planning Groups**

– Methods

– Molecular Networks

## Day 2. Analytical Approaches to and Applications of Network Medicine to Pathobiology and Clinical Medicine

8.30 am *From Protein-Protein to Human-Machine Interactions*

**Jörg Menche**, PhD

9.30 am *Data Science, Networks and Infectious Diseases:*

*More Than Forecast*

**Alessandro Vespignani**, PhD

10.30 am **Break**

10.50 am *Machine Learning in Emergency Medicine*

**Ziad Obermeyer**, MD

11.10 am *Deep Learning and Imaging*

**George Washko, Jr.**, MD, MS

11.30 am *Network Medicine and Disease Endophenotypes*

**Bradley A. Maron**, MD

11.50 am *Disease Cluster-based Drug Repurposing*

**Harald H.H.W. Schmidt**, MD, PhD, PharmD, FESC

12.10 pm *Big Data and Pregnancy Outcomes*

**Elisabetta Poluzzi**, PharmD, PhD

12.30 pm *AI in Radiology: from Qualitative to Quantitative Data*

**Carlo Catalano**, MD

12.50 pm *Genomics and Networks in COPD*

**Edwin K. Silverman**, MD, PhD

1.10 pm **Lunch**

2.10 pm *Personality Traits, Mental Health and Use of Mobile Technology: a Learning Approach*

**Julinda Stefa**, PhD

2.30 pm *Plasticity Interactome. The Necessary Network for the Development of a Predictive and Personalized Medicine for Neurodegenerative Diseases*

**Michele Papa**, MD

2.50-4.00 pm **Poster Session**

4.00-6.00 pm **Discussion and Planning Groups**

– Machine Learning in Clinical Medicine

– Phenotypic Networks

## Day 3. Future Planning

8.15 am **Format**

8.30 am **Topic One Report of Discussion and Planning Groups**

9.30 am **Topic Two Report of Discussion and Planning Groups**

10.30 am **General Discussion and Next Steps**