

# Special Track on Network Medicine

## Call for papers

We are pleased to invite submissions for the **Special Track on Network Medicine** as part of IEEE Computer-Based Medical Systems (CBMS 2025), which will be held on June 18-20, 2025 in Madrid. This special track will focus on the cutting-edge interdisciplinary field of Network Medicine, which combines the principles of network science with medical and biological research to understand complex biological systems and improve healthcare outcomes.

This special track aims to create a platform for discussion, collaboration, and knowledge exchange among researchers, clinicians, and professionals at the forefront of Network Medicine. It will focus on recent advances in understanding the molecular networks that underpin diseases and will explore how these insights are being translated into clinical applications.

### Objectives of the Special Track:

- **Interdisciplinary Collaboration:** Bringing together researchers from fields such as computational biology, systems medicine, bioinformatics, and clinical sciences to foster dialogue and collaboration on Network Medicine's most pressing challenges and opportunities.
- **Practical Applications:** Highlighting the translation of network-based insights into clinical practice, from novel diagnostic tools to personalized treatment strategies, to improve patient outcomes.
- **Future Directions:** Identifying key areas for future research and development, such as integrating artificial intelligence (AI) and machine learning with network models to accelerate discoveries and improve predictive models.

### Topics of interest

Network Medicine seeks to map and analyze the complex interactions between genes, proteins, metabolites, cells, and environmental factors, offering novel insights into disease mechanisms, drug repurposing, and personalized treatment strategies. We invite original research papers, review articles, and case studies on topics including, but not limited to

- Network-Based Disease Classification
- Network-Based Drug Discovery
- Multi-Omics Integration in Network Medicine
- Disease-Disease Networks
- Gene and Protein Interaction Networks
- Network Models of Pathophysiology
- Patient-Specific Network Models
- Network Resilience and Fragility in Health
- Integration of AI and Network Theory
- Epidemiological Networks
- Therapeutic Targeting of Networks

- Network Visualization and Interpretability
- Network Medicine and Rare Diseases
- Ethical and Computational Challenges in Network Medicine
- Evolutionary Networks in Medicine
- Applications of Network Medicine in Public Health

We encourage submissions that address both theoretical and practical aspects of Network Medicine, including computational methods, clinical applications, and the development of new tools for network analysis.

#### **Submission Guidelines:**

- **Paper Types:** We welcome full papers, short papers and posters.
- **Submission Format:** All submissions must follow the IEEE CBMS 2025 formatting guidelines. Papers should be submitted through the conference submission system.
- **Review Process:** All submissions will undergo a rigorous peer-review process by experts in the field. Accepted papers will be published in the conference proceedings and indexed in leading databases.

#### **Important Dates:**

- **Submission Deadline:** March 7, 2025
- **Notification of Acceptance:** April 20, 2025
- **Camera-Ready Papers Due:** April 30, 2025
- **Conference Dates:** June 18-20, 2025

#### **Track Chairs:**

- Alejandro Rodríguez González, Universidad Politécnica de Madrid, Spain
- Lucia Prieto Santamaría, Universidad Politécnica de Madrid, Spain
- Harald Schmidt, Maastricht University, The Netherlands
- Emre Guney, Stalicia, Spain
- Jörg Menche, University of Vienna, Austria
- Alberto Jesús Martín Martín, Universidad San Sebastian, Chile

For more information, please visit the IEEE CBMS 2025 website at <https://2025.cbms-conference.org/> or contact the track chairs at alejandro [dot] rg [at] upm [dot] es.

We look forward to receiving your submissions and to advancing the field of Network Medicine together!