

# Call for Workshop Papers

## CMLS 2024: The 5th International Workshop on Conceptual Modeling for Life Sciences

<https://deib-geco.github.io/cmls2024/>

Pittsburgh, Pennsylvania

28-31 October 2024

To be held in conjunction with the 43rd International Conference on Conceptual Modeling, ER 2024

<http://er2024.org/>

### Workshop Description:

The recent advances in unraveling the secrets of human conditions and diseases have encouraged new paradigms for their prevention, diagnosis, and treatment. As information is increasing at an unprecedented rate, it directly impacts the design and future development of information and data management pipelines; thus, new ways of processing data, information, and knowledge in healthcare environments are strongly needed.

The fifth edition of the workshop aims to continue being a meeting point for Information Systems (IS), Conceptual Modeling (CM), Data Management (DM), and Artificial Intelligence (AI) researchers working on health care and life science problems. It is also an opportunity to share, discuss and find new approaches to improve promising fields, with a special focus on Genomic Data Management – how to use the information from the genome to better understand biological and clinical features – and Precision Medicine – giving to each patient an individualized treatment by understanding the peculiar aspects of the disease.

From the precise ontological characterization of the components involved in complex biological systems to the modeling of the operational processes and decision support methods used in the diagnosis and prevention of diseases, the joined research communities of IS, CM, DM, and AI have an important role to play; they must help in providing feasible solutions for high-quality and efficient health care.

CMLS aims to become a forum for discussing the responsibility of the conceptual modeling community in supporting the life sciences related to these new realities.

### Topics of interest

The fifth edition of the workshop focuses on Conceptual Modeling as a means for facing the challenges that emerge when designing and developing systems for life sciences, focused on genomics and precision medicine. The workshop is not restricted to specific research methods; we will consider both conceptual and empirical research, as well as novel applications.

That said, the topics of interest include, but are not limited to:

- AI and life science
- Large Language Models for improving precision medicine and decision making
- Conceptual models for data-driven AI systems in life sciences
- Conceptual modeling for genomics
- Modeling of complex biological systems and health ecosystems
- Information systems for healthcare, genomics, or medicine of precision
- Design, implementation, and evaluation of health information systems
- Electronic/digital health information systems
- Life science-related domain-specific modeling languages
- Data management and integration for genomics and biology
- Ontologies and workflows for life sciences
- Clinical and biological data interoperability
- Interoperability of health information systems
- Knowledge representation for genetics
- Business process modeling for genetic/clinical diagnosis
- Conceptual model-driven big data analytics for genomics, clinical diagnosis, or biological problems
- Models for the digital transformation of healthcare systems
- Conceptual models in life sciences: from theory to practice
- Models to facilitate multidisciplinary exchange in healthcare contexts
- Virology-related conceptual models and their applications
- Conceptual models and information systems for fighting climate change and its effects
- Reviews focusing on a particular life science dimension.

## Important Dates

**Abstract Submission (Optional)**  **not later than 13 July 2024**

**Paper Submission**  **not later than 27 July 2024**

**Paper Notification**  **not later than 11 August 2024**

**Camera-Ready Version**  **30 August 2024**

**Conference**  **28-31 October 2024**

## Workshop Organizer:

- Anna Bernasconi, Politecnico di Milano, Italy
- Alberto García S., Universitat Politècnica de València, Spain
- José Fabián Reyes Román, Universitat Politècnica de València, Spain
- Edelweis Rohrer, Facultad de Ingeniería of Universidad de la República, Uruguay

## Program Committee Members (a tentative list) :

- Bernardo Breve, Università degli Studi di Salerno, Italy
- Raffaele Calogero, University of Turin
- Stefano Ceri, Politecnico di Milano
- Stefano Cirillo, Università degli Studi di Salerno, Italy
- Tommaso Dolci, Politecnico di Milano
- Giovanni Giachetti, Universitat Politècnica de València, Spain

- Giancarlo Guizzardi, University of Twente, Netherlands
- Sergio Lifschitz, Pontifical Catholic University of Rio de Janeiro, Brazil
- Giovanni Meroni, Technical University of Denmark
- Paolo Missier, Newcastle University, United Kingdom
- José Palazzo, Federal University of Rio Grande do Sul, Brazil
- Ignacio Panach, University of Valencia, Spain
- Oscar Pastor, Universitat Politècnica de València
- Barbara Pernici, Polytechnic University of Milan, Italy
- Tiago Prince Sales, University of Twente, The Netherlands
- Monjoy Saha, National Cancer Institute, USA
- Veda Storey, Georgia State University, USA
- Lisa Trigiante, University of Modena and Reggio Emilia, Italy
- Juan Carlos Trujillo, University of Alicante, Spain

## Submission Guidelines

Submit papers via [EasyChair for ER 2024](#) to the “CMLS Workshop Papers” Track.

Since the proceedings will be published by Springer in the LNCS series, authors must submit manuscripts using the [LNCS style](#) or [Overleaf](#). The page limit is 10 pages (plus 1-page references). Papers will be judged on contribution, literature basis, novelty, clarity, relevance, and rigor. The review process is double-blind. Submissions must be anonymized.