



**RANDOM GRAPH MODELS WITH  
APPLICATIONS IN NETWORK  
ANALYSIS AND EPIDEMIOLOGY**

**STEFANO GUARINO**

IAC-CNR

**UNIVERSITÀ ROMA TRE  
DIPARTIMENTO DI  
MATEMATICA E FISICA**

**MERCOLEDÌ 24 MAGGIO 2023**

**ORE 16.00**

**AULA M2**

## SEMINARIO DI ORIENTAMENTO

### Random graph models with applications in network analysis and epidemiology

Stefano Guarino

*Istituto per le Applicazioni del Calcolo "Mauro Picone"*

**Abstract:** Random graph models play a major role in the analysis of complex systems: they can be used to randomize an observed network, to measure the significance of empirical patterns, or to generate synthetic networks tuned upon the characteristics of a given population. In this talk, I will review a few approaches to the modeling of complex networks and describe their applications in social media analysis and epidemiology.

Università Roma Tre

Dipartimento di Matematica e Fisica

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[Teams link](#)

**Lo speaker:** Stefano Guarino earned his MSc and PhD in Mathematics at Roma Tre University. He is currently with the Istituto per le Applicazioni del Calcolo "Mauro Picone" of the Consiglio Nazionale delle Ricerche, where he works on data analysis and security, with a recent focus on graphs and complex systems, addressing both methodological/algorithmic and implementation/technological aspects. He participated to several national and international research projects, including the H2020 Project "SOMA", where he contributed to the definition of models and algorithms for the analysis of and the fight against disinformation on social media, and the EU ISEC Project "IANCIS", where he worked on the extraction and correlation of semantics and topological properties of the Tor Dark Web. He is the PI of the MUR funded FISR Project "CARES", which aims at defining a multi-layer graph-based model to simulate real-world person-to-person interactions and guide epidemic containment measures.