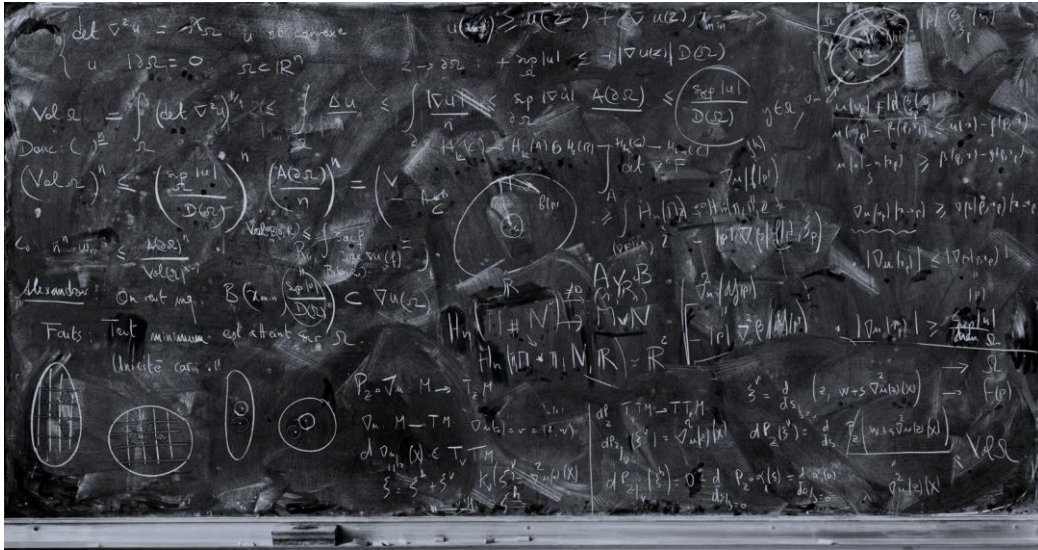


# The Heuristic View

## *Logic, Mathematics, and Science*

# CONFERENCE



SAPIENZA  
UNIVERSITÀ DI ROMA

DEPARTMENT OF PHILOSOPHY – SAPIENZA UNIVERSITY OF ROME

PH.D. COURSE IN PHILOSOPHY

20-22 February 2023

Villa Mirafiori, via Carlo Fea 2, room II

<https://uniroma1.zoom.us/j/97038950031>

The conference is hybrid, free, and open to the public (no registration required)

Organized by Emiliano Ippoliti and Fabio Sterpetti



Under the auspices of the *Italian Society for Logic and Philosophy of Sciences* (SILFS)

Info: [emiliano.ippoliti@uniroma1.it](mailto:emiliano.ippoliti@uniroma1.it); [fabio.sterpetti@uniroma1.it](mailto:fabio.sterpetti@uniroma1.it)

## Description

The study of scientific discovery has been boosted by several recent philosophical investigations. These have challenged the mainstream philosophy of science and mathematics that has prevailed for the past century. These investigations show that the study of scientific discovery is a central aspect in the philosophy of science, and that its treatment in terms of notions like ‘genius’, ‘enlightenment’ and ‘intuition’ are inadequate and must be replaced by ‘logical’, rational, and replicable processes and methods. This contrasts with the mainstream view, which claims that the philosophy of science and mathematics cannot concern itself with the making and discovery of science and mathematics, but only with the finished products of that making and discovery. A recent example of investigation that contrasts with the mainstream view is the latest book by Carlo Cellucci, *The Making of Mathematics: Heuristic Philosophy of Mathematics* (2022, Springer, Synthese Library, volume 448), which offers an alternative approach to mainstream philosophy of mathematics, according to which it is possible to rationally investigate the making of mathematics. This conference aims precisely at discussing the problem of discovery in science and mathematics and the possibility of defining its method.

## Programme

### DAY 1                    MONDAY, 20 FEBRUARY 2023

Chair                    TERESA NUMERICO (Roma Tre University)

09:00-10:00        ALEXANDER C. PASEAU                    *Deductive Science and Non-Deductive Knowledge*  
(University of Oxford)

10:00-11:00        SORIN BANGU                                *Wittgenstein on Benacerraf’s Dilemma*  
(University of Bergen)

*coffee break*

11:20-12:20        EMILIANO IPPOLITI                        *The Efficient Market Hypothesis: A Heuristic Appraisal*  
(Sapienza University of Rome)

12:20-13:20        OTÁVIO BUENO                             *Lakatos, Cellucci, and Heuristic Philosophy of Mathematics*  
(University of Miami)

*lunch break*

Chair                    FABIO STERPETTI (Sapienza University of Rome)

15:00-16:00        JOHN CLEMENT                             *Multiple Levels of Heuristics used in Constructing Scientific Models*  
(University of Massachusetts)

16:00-17:00        LORENZO MAGNANI                        *Mathematics as Objective Knowledge: Discovering How to Make the World Intelligible*  
(University of Pavia)

*coffee break*

17:20-18:20        W. D’ALESSANDRO, A. MURPHY        *Imaginative Resistance and Genre in Mathematics and Science*  
(LMU Munich)

**DAY 2**            **TUESDAY, 21 FEBRUARY 2023**

Chair            EMILIANO IPPOLITI (Sapienza University of Rome)

09:00-10:00    MICHELE GINAMMI            *On the Heuristic Effectiveness of Physics in Mathematics*  
(Independent Researcher)

10:00-11:00    DIANA QUARANTOTTO            *From Physics to Metaphysics: Aristotle's Heuristic Path*  
(Sapienza University of Rome)

*coffee break*

11:20-12:20    DONALD GILLIES            *Lakatos and the Philosophy of Mathematics*  
(University College London)

12:20-13:20    ANGELO PETRONI            *Does Philosophy of Science still Matter?*  
(Sapienza University of Rome)

*lunch break*

Chair            SORIN BANGU (University of Bergen)

15:00-16:00    ALAN BAKER            *Applied Mathematics as Problem-Driven Game*  
(Swarthmore College)

16:00-17:00    DAVID CORFIELD            *Category Theory as a Heuristic Tool in Logic and Mathematics*  
(University of Kent)

*coffee break*

17:20-18:20    CARLO CELLUCCI            *The Two Paradigms of Logic*  
(Sapienza University of Rome)

**DAY 3**            **WEDNESDAY, 22 FEBRUARY 2023**

Chair            DIANA QUARANTOTTO (Sapienza University of Rome)

09:00-10:00    CATARINA DUTILH NOVAES            *A Dialogical Account of Proofs in Mathematical Practice*  
(VU Amsterdam)

10:00-11:00    FABIO STERPETTI            *The Heuristic View and Anti-Exceptionalism about Logic*  
(Sapienza University of Rome)

*coffee break*

11:20-12:20    TERESA NUMERICO            *Abstraction and Classification in Machine Learning: Some Undesirable and Unpredictable Consequences*  
(Roma Tre University)

12:20-13:20    R. CAMPANER, M.C. GALAVOTTI            *Pluralism: An Antidote against the Chimera of Certainty*  
(University of Bologna)

*end of conference*

## Timetable

	MONDAY 20	TUESDAY 21	WEDNESDAY 22
Chair	<i>Numerico</i>	<i>Ippoliti</i>	<i>Quarantotto</i>
1	09:00-10:00 <b>Paseau P</b>	09:00-10:00 <b>Ginammi R</b>	09:00-10:00 <b>Dutilh Novaes R</b>
2	10:00-11:00 <b>Bangu P</b>	10:00-11:00 <b>Quarantotto P</b>	10:00-11:00 <b>Sterpetti P</b>
	<i>coffee break</i>	<i>coffee break</i>	<i>coffee break</i>
3	11:20-12:20 <b>Ippoliti P</b>	11:20-12:20 <b>Gillies R</b>	11:20-12:20 <b>Numerico P</b>
4	12.20-13:20 <b>Bueno R</b>	12.20-13:20 <b>Petroni P</b>	12.20-13:20 <b>Campaner, Galavotti R</b>
	<i>lunch break</i>	<i>lunch break</i>	<i>end of conference</i>
Chair	<i>Sterpetti</i>	<i>Bangu</i>	<b>Legend</b> <b>P</b> = in person <b>R</b> = on-line <b>?</b> = to be confirmed whether in person or on-line
5	15:00-16:00 <b>Clement R</b>	15:00-16:00 <b>Baker P</b>	
6	16:00-17:00 <b>Magnani P</b>	16:00-17:00 <b>Corfield R</b>	
	<i>coffee break</i>	<i>coffee break</i>	
7	17:20-18:20 <b>D'Alessandro, Murphy R</b>	17:20-18:20 <b>Cellucci ?</b>	