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3<sup>rd</sup> edition

# ARTIFICIAL INTELLIGENCE FOR ONCOLOGY

PRESIDENT OF THE CONFERENCE

**ARSELA PRELAJ**

MILAN, ITALY

**8-9 MAY 2025**

& ONLINE



# OVERVIEW

The AI for Oncology Conference aims to equip participants with a comprehensive understanding of how advanced AI technologies are transforming cancer care and research. As AI innovation accelerates, its applications in oncology are becoming essential across the spectrum of diagnosis, treatment, and research. From integrating diverse datasets, such as multiomics, imaging, and clinical data, to advancing diagnostic precision, AI is enabling the discovery of patterns that traditional methods often overlook.

Participants will explore how AI-driven platforms are improving the integration of data, leading to more accurate diagnostics and personalized treatment approaches for cancers such as lung, breast, and colorectal cancers. Innovations in radiomics and digital pathology will also be highlighted, showcasing how AI enhances the analysis of imaging data and histopathology, particularly for challenging cancers like pancreatic, liver prostate, and head and neck tumors.

The conference will further delve into the role of AI in optimizing clinical research, from designing clinical trials to refining targeted therapies and immunotherapies.

Case studies will illustrate how AI is driving advances in cancer care, including applications in melanoma, NSCLC, and ovarian cancers, where predictive algorithms can identify the best treatment regimens, from adaptive radiation therapy to chemotherapy or immunotherapy dosing. The integration of Large Language Models and Foundation Models offers new ways to analyze clinical data, providing real-time, evidence-based recommendations that assist oncologists in selecting the most effective therapies, whether hormonal treatments for breast cancer or targeted/immunotherapy drugs for NSCLC or unknown primary tumors.

Additionally, the conference will emphasize the need for collaboration across healthcare providers, researchers, and industry partners, underscoring how such partnerships enhance diagnostic accuracy and treatment delivery for various cancer types, including breast, lung, and gastrointestinal cancers. Ultimately, the conference will provide a platform for participants to gain insights into cutting-edge AI advancements and how they can be applied to improve cancer diagnosis, treatment, and patient outcomes across a range of cancer types.

The shared knowledge and diverse experiences will enable clinicians, researchers, and technologists to further develop and implement innovative AI solutions in oncology.

## FORMAT

The event will cover two days. The speakers will have a diverse background to reflect the spectrum of Artificial Intelligence research (and beyond), from Artificial Intelligence engineering experts, to clinicians and translational researchers, and hybrid figures such as clinical Artificial Intelligence specialists. Faculty members represent worldwide centers of excellence in the field. The attendance is expected to mirror this variety, along with participants with a more specific background in imaging and pathology.

The conference also includes poster sessions, with prizes for the best posters in various AI fields. Participants will also be encouraged to participate to a call for abstracts, with the opportunity to present their work in flash talks during the symposium.

## PRESIDENT OF THE CONFERENCE

**Arsela Prelaj, MD, PhD**

*Medical Oncologist, Thoracic Oncology Unit, Department of Oncology and Hemato-Oncology Fondazione IRCCS Istituto Nazionale Tumori, Milano, PhD in Bioengineering and Artificial Intelligence, Politecnico di Milano, Member of the ESMO Working Group on Real World Data and Digital Health*

## SCIENTIFIC COMMITTEE

**Filippo de Braud,**

*Fondazione IRCCS Istituto Nazionale Tumori, Milano*

**Alessandra Pedrocchi,**

**Francesco Trovò,**

**Vanja Miskovic,**

*Politecnico di Milano, DEIB*

## SCIENTIFIC SECRETARIAT

**Giovanni Scoazec,**

**Miriam Fink,**

**Marco Meazza Prina,**

**Cecilia Silvestri,**

**Andrea Spagnoletti,**

*Fondazione IRCCS Istituto Nazionale Tumori, Milano*

**Margherita Favali,**

**Alberto Ferrarin,**

**Chiara Giangregorio,**

**Aleksandra Zec,**

*Politecnico di Milano, DEIB*

SCIENTIFIC PROGRAM

08 MAY 2025

### 09:00 POSTER SESSION

10:00 Welcome  
**ARSELA PRELAJ**

**GUSTAVO GALMOZZI**

*President - Fondazione IRCCS Istituto Nazionale dei Tumori*

**MARIA TERESA MONTELLA**

*General Director Fondazione IRCCS Istituto Nazionale dei Tumori*

**GIOVANNI APOLONE**

*Scientific Director, Fondazione IRCCS Istituto Nazionale dei Tumori*

**FILIPPO DE BRAUD**

*Director - Department of Oncology and Hemato-Oncology, Fondazione IRCCS Istituto Nazionale dei Tumori*

**EMANUELE MONTI**

*Presidente Commissione Sostenibilità sociale, casa e famiglia Regione Lombardia*

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SESSION

## DATA-DRIVEN MODELS AND PLATFORMS

*Chairs:* **SOKOL KOSTA, LAURA MAZZEO, MARCELLO RESTELLI**

10:20 Real-World Data-Driven Models in Oncology

**FRANCISCO SANCHEZ-VEGA, USA**

10:40 APOLLO 11: a biodata-driven model for lung cancer patients treated with targeted and immunotherapies

**LEONARDO PROVENZANO, Italy**

10:50 Discussion

11:05 AIDA - A triple helix ecosystem for imaging diagnostics  
**CLAES LUNDSTRÖM, Sweden**

11:25 Federated learning and Swarm Learning for decentralized data sharing: hype or new horizon?

**DANIEL TRUHN, Germany**

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SESSION

11:45 Use Case:  
ODELIA - A Retrospective Analysis of MRI Data for Breast Cancer Screening  
**OLIVER SALDANHA, Germany**

11:55 Discussion

12:15 Lunch Break

## SPECIAL SESSION: LITERACY AND EDUCATION

*Chairs:* **EUGENIO SANTORO, ANDREA SPAGNOLETTI, JULIEN VIBERT**

13:15 Interpreting AI outputs: explanations for patients and carers, from discovery to therapeutic decisions  
**ALESSANDRA PEDROCCHI, Italy**

13:30 Use Case:  
Codecision-making tools for improving patients' choices in NSCLC patients treated with immunotherapy  
**GABRIELLA PRAVETTONI, Italy**

13:45 Discussion

13:55 Guidelines and metrics for image analysis validation  
**EVANGELIA CHRISTODOULOU, Germany**

14:10 From Code to Care: Ethics and Legal and Medical Device Regulation Pathways  
**CARLO ROSSI CHAUVENET, Italy**

14:25 Empowering AI research: how Nature Portfolio Supports Innovative AI Publications  
**LORENZO RIGHETTO, UK**

14:40 Discussion

14:50 **KEYNOTE LECTURE**  
**LARGE LANGUAGE MODELS**  
**JAKOB NIKOLAS KATHER, Germany**

*Chairs:* **FEDERICA CORSO, HELENA LINARDOU**

15:20 Discussion

15:35 **Best Oral 1:**  
From radiology reports to early prognostic markers: benchmarking LLMs in chronic liver disease  
**HANIA PAYERD, UK**

- 15:45** Discussion  
**15:55** Coffee Break

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SESSION

### AI IN CLINICAL RESEARCH

*Chairs:* **ROBERTO FERRARA, SABINA SANGALETTI, LUCA INVERNIZZI**

- 16:20** AI-driven biomarkers: how to incorporate and validate them in clinical trials  
**MIHAELA ALDEA, USA**
- 16:35** Enhancing the Impact of Real-World Data in Oncology through AI  
**MASSIMO DI MAIO, Italy**
- 16:50** The role of AI in Molecular Tumor Boards the point of view of clinicians  
**FILIPPO DE BRAUD, Italy**
- 17:00** Use Case: How LLMs can help assist Molecular Tumor Boards  
**LOÏC VERLINGUE, France**
- 17:10** Discussion
- 17:20** AI for cancer drug discovery in the era of immunotherapy and targeted therapy  
**MARINA CHIARA GARASSINO, USA**
- 17:40** Use case: The CURATE.AI algorithm for treatment response assessment and personalised dosing  
**DEAN HO, Asia**
- 18:00** Discussion
- 18:10 Best Oral 2:** Accelerating Translational Research with Synthetic Data: Enhancing Multi-State Digital Twin Models for Disease State Prediction in Breast Cancer  
**FLAVIA JACOBS, Italy**
- 18:20** Important Announcement  
**ARSELA PRELAJ, JAKOB NIKOLAS KATHER, HELENA LINARDOU**
- 18:40 POSTERITIVO (Poster Session with aperitif)**

## SCIENTIFIC PROGRAM 09 MAY 2025

### 09:00 POSTER SESSION

**10:00 KEYNOTE LECTURE**  
FOUNDATION MODELS AND  
COPILOTS IN DIGITAL PATHOLOGY  
**FAISAL MAHMOOD, USA**

*Chairs:* **GIACOMO BORACCHI, ARSELA PRELAJ**

- 10:30** Discussion  
**10:45** Awards

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SESSION

### AI FOR IMAGING

*Chairs:* **ALESSANDRO CICCETTI, GIUSEPPE VISCARDI**

- 11:00** Digital pathology: where are we in clinical cancer practice?  
**ALEXANDER T. PEARSON, USA**
- 11:20** Use Case: Digital pathology for liver cancer and immunotherapy prediction  
**JULIEN CALDERARO, France**
- 11:30** Discussion
- 11:40** Radiomics: where are we in clinical cancer practice?  
**RAQUEL PÉREZ-LOPEZ, Spain**
- 12:00** Use Case: AI applied to image-guided radiation therapy in colorectal cancer  
**LUCA BOLDRINI, Italy**
- 12:10** Discussion  
**12:20** Lunch Break

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SESSION

### MULTIMODAL

*Chairs:* **LUCA AGNELLI, MONICA GANZINELLI, FRANCESCO TROVÒ**

- 13:20** Overcoming Data Integration Challenges in Addressing Immunotherapy Heterogeneity  
**SOHRAB SHAH, USA**
- 13:40 Best Oral 3:** AI-Driven Multiomic Science for Predictive Cancer Therapy  
**MIREIA CRISPIN ORTUZAR, UK**
- 14:00** Explaining embedded multimodal data in oncology  
**JANA LIPKOVA, USA**
- 14:30** I3LUNG: how to select 1st line immunotherapy in NSCLC patients  
**VANJA MISKOVIC, Italy**
- 14:40** Multimodal Cough Analysis as a Pre-Screening Tool for Lung Cancer Detection  
**LICCIARDELLO CRISTINA MARIA, Italy**
- 14:50** Discussion
- 15:00 NO CME SESSION**
- 15:50 AWARDS & BEST POSTER**  
Presented by:  
**TERESA BENINATO**  
**ALESSANDRO DE TOMA**  
**GIUSEPPE LO RUSSO**  
Announcement of the winners
- 16:10 PARTING WORDS**  
**ARSELA PRELAJ**

NO CME  
SESSION

### INDUSTRY & COMPANY SYMPOSIUM

#### ENCODING AND INTEGRATING INDUSTRY, PHARMA, AND ACADEMIA IN THE ERA OF AI

*Chairs:* **MARTA BRAMBILLA, MARIO OCCHIPINTI, CLAUDIA PROTO, DIEGO SIGNORELLI**

- 15:00** Talk 1
- 15:15** Accelerating Precision Oncology with Multimodal Data Analytics  
**SOPHIA GENETICS**
- 15:30** From Data to Decisions: Agentic AI Transforming Oncology and Precision Health  
**LUIGI DE VIZZI, Northern Area Sales Director BSistemi**  
**ARSHAD FARHAD, Distinguished leader in AI-Driven Healthcare for Dell Technologies**
- 15:45** Discussion

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## GENERAL INFORMATION

### CONGRESS VENUE

**Aula Magna, Fondazione IRCCS Istituto Nazionale Tumori**  
Via Giacomo Venezian, 1 - 20133 Milano

### REGISTRATION

Registration is free of charge.  
You may register for IN-PERSON OR ONLINE-ONLY ACCESS  
[www.events-communication.com/event/aiforoncology2025/](http://www.events-communication.com/event/aiforoncology2025/)

### OFFICIAL LANGUAGE AND TIME

The official language is English  
The official Time is Central European Summer Time (CEST), UTC +2

### CME CREDITS

CME accreditation (valid for Italian participants only) for: Medical Doctor, Chemist, Pharmacist, Biologist, Physician, Nurse. CME credits required Italian CME credits will be granted to those participants who attend at least 90% of scientific works, fill in the questionnaire assessment of perceived quality and duly fill in the evaluation questionnaires answering correctly 75% of the questions.

## FACULTY

**Luca Agnelli**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Mihaela Aldea**, Dana-Farber Cancer Institute, Boston, USA

**Teresa Beninato**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Luca Boldrini**, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy

**Giacomo Boracchi**, Politecnico di Milano DEIB, Milano, Italy

**Marta Brambilla**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Julien Calderaro**, Henri Mondor Hospital, Créteil, France

**Evangelia Christodoulou**, German Cancer Research Center DKFZ, Germany

**Alessandro Cicchetti**, Fondazione IRCCS Istituto Nazionale Tumori, Milano, Italy

**Federica Corso**, Fondazione IRCCS Istituto Nazionale Tumori, Milano, Italy

**Mireia Crispin Ortuzar**, University of Cambridge, CRUK Cambridge Centre, UK

**Filippo De Braud**, Fondazione IRCCS Istituto Nazionale Tumori, Milano, Italy

**Alessandro De Toma**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Massimo Di Maio**, AOU Città della Salute e della Scienza Torino, Italy

**Roberto Ferrara**, IRCCS Ospedale San Raffaele, Milano, Italy

**Monica Ganzinelli**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Marina Chiara Garassino**, University of Chicago, USA

**Dean Ho**, University of Singapore, ASIA

**Luca Invernizzi**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Jakob Nikolas Kather**, Technical University of Dresden, Germany

**Sokol Kosta**, Aalborg University, Denmark

**Helena Linardou**, Metropolitan Hospital, Athens, GR

**Jana Lipkova**, University of California Irvine, USA

**Giuseppe Lo Russo**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Claes Lundström**, Linköping University, Sweden

**Faisal Mahmood**, Harvard Medical School, Division of Medical Sciences, USA

**Laura Mazzeo**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Vanja Miskovic**, Fondazione IRCCS Istituto Nazionale dei Tumori and Politecnico di Milano DEIB, Milano, Italy

**Mario Occhipinti**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Alexander T. Pearson**, University of Chicago, USA

**Alessandra Pedrocchi**, Politecnico di Milano DEIB, Milano, Italy

**Raquel Pérez-Lopez**, VHIO Radiomics Group, Barcelona, Spain

**Gabriella Pravettoni**, Istituto Europeo di Oncologia, Milano, Italy

**Arsela Prelaj**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Claudia Proto**, Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

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**Marcello Restelli**, Politecnico di Milano DEIB, Milano, Italy

**Lorenzo Righetto**, Nature Medicine, UK

**Carlo Rossi Chauvenet**, Bocconi University, Milano, Italy

**Oliver Saldanha**, Technical University of Dresden, Germany

**Francisco Sanchez-Vega**, Memorial Sloan Kettering Cancer Center, New York, USA

**Sabina Sangaletti**, Tumor Genomics Fondazione IRCCS Istituto Nazionale dei Tumori, Milano, Italy

**Eugenio Santoro**, Istituto Mario Negri, Milano, Italy

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**Daniel Truhn**, Aachen University Hospital, Germany

**Loïc Verlingue**, Centre Léon Berard, Lyon

**Julien Vibert**, Gustave Roussy, Villejuif, France

**Giuseppe Viscardi**, Azienda Ospedaliera Monaldi Cotugno Cto, Università degli Studi della Campania Luigi Vanvitelli, Napoli, Italy