

UNDER THE AUSPICES OF

3rd edition

ARTIFICIAL INTELLIGENCE FOR ONCOLOGY

WITH THE UNCONDITIONAL SPONSORSHIP OF

PRESIDENT OF THE CONFERENCE

ARSELA PRELAJ

MILAN, ITALY

8-9 MAY 2025


& ONLINE

SCIENTIFIC PROVIDER AND CONGRESS ORGANIZER



Events srl
Via Lorenzo Lotto 9, 60019 Senigallia (AN)
www.events-communication.com
segreteria@events-communication.com
Ph. +39 071 7930220 Fax. +39 071 9252094



 **Fondazione IRCCS**
Istituto Nazionale dei Tumori

Sistema Socio Sanitario

 **Regione**
Lombardia



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, 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

FILIPPO DE BRAUD

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

GIOVANNI APOLONE

Scientific Director, Fondazione IRCCS Istituto Nazionale dei Tumori

GUSTAVO GALMOZZI

President - Fondazione IRCCS Istituto Nazionale dei Tumori

CARLO NICORA

General Director, Fondazione IRCCS Istituto Nazionale dei Tumori

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SESSION

DATA-DRIVEN MODELS AND PLATFORMS

Chairs: **FRANCESCO TROVÒ, SOKOL KOSTA, LAURA MAZZEO**

10:20 Data-Driven Models in Oncology:
Employing Real and Synthetic Data

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: **EMILIA AMBROSINI, EUGENIO SANTORO, ANDREA SPAGNOLETTI**

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 larynx and 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, ARSELA PRELAJ**

15:20 Discussion

15:35 Best abstracts - Oral Presentation 1

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 GARASSINO, USA

17:40 Use case:
The CURATE.AI algorithm for treatment
response assessment and personalised dosing
DEAN HO, ASIA

17:45 Discussion

18:00 Important Announcement

18:10 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 CICCHETTI, GIUSEPPE VISCARDI, NICOLA FUSCO**

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 Best abstracts - Oral Presentation 2

12:10 Use Case:
AI applied to image-guided radiation therapy in
colorectal cancer
LUCA BOLDRINI, Italy

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SESSION

MULTIMODAL

Chairs: **LUCA AGNELLI, MONICA GANZINELLI, MARCELLO RESTELLI**

13:30 Overcoming Data Integration Challenges
in Addressing Immunotherapy Heterogeneity
SOHRAB SHAH, USA

13:50 AI-Driven Multiomic Science for
Predictive Cancer Therapy
MIREIA CRISPIN ORTUZAR, UK

14:10 Explaining embedded multimodal data in oncology
JANA LIPKOVA, USA

14:40 I3LUNG: how to select 1st line immunotherapy
in NSCLC patients
VANJA MISKOVIC, Italy

14:50 Best abstracts - Oral Presentation 3

15:00 Discussion

NO CME
SESSION

INDUSTRY & COMPANY SYMPOSIUM

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

15:10 Talk 1

15:20 Talk 2

15:30 Talk 3

15:40 Talk 4

15:50 Discussion

16:00 BEST POSTER AWARDS

Presented by:
**TERESA BENINATO
ALESSANDRO DE TOMA
GIUSEPPE LO RUSSO**

Announcement of the winners

16:20 PARTING WORDS
ARSELA PRELAJ

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/

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 questionnaire answering correctly 75% of the questions.

CALL FOR ABSTRACT

The call for abstract is open, don't miss the opportunity to submit your paper!
The Scientific Committee welcomes the submission of abstracts.

TOPIC AREAS:

- AI-Driven Imaging: Advances in Radiology and Digital Pathology** (Covers AI applications in medical imaging)
- Multi-Omic Integration and Analysis** (Focuses on AI methodologies for integrating and analyzing genomic, transcriptomic, proteomic, and other omic data together with neural networks)
- Large Language Models and Natural Language Processing in Oncology** (Explores the use of LLMs and NLP for medical text analysis, clinical decision support, and other oncological applications)
- Multimodal AI: Integrating Data for Cancer Insights** (Highlights approaches combining imaging, omics, clinical, and other data for comprehensive cancer analysis)
- Patient-Centered AI and Quality of Life Monitoring and Outcomes Prediction** (Covers AI tools for monitoring quality of life, symptom management, and patient-reported outcomes)
- Innovations in AI for Cancer Research and Clinical Practice** (An open category for cutting-edge and emerging AI applications in oncology not covered in other categories)

SUBMISSION DEADLINES:

08 th December 2024	OPEN CALL
03 rd February 2025	SUBMISSION DEADLINE
04 th March 2025	OUTCOME NOTIFICATIONS



ONLINE SUBMISSIONS

INVITED SPEAKERS

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

Emilia Ambrosini, Politecnico di Milano DEIB, Milano, Italy

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

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

Luca Boldrini, Policlinico Gemelli, 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

Nicola Fusco, IRCCS European Institute of Oncology (IEO), Milano, Italy

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

Marina 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

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

Leonardo Provenzano, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy

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

Sohrab Shah, Memorial Sloan Kettering Cancer Center, USA

Diego Signorelli, Niguarda Cancer Center, Grande Ospedale Metropolitano Niguarda, Milano, Italy

Andrea Spagnoletti, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy

Francesco Trovò, Politecnico di Milano DEIB, Milano, Italy

Daniel Truhn, Aachen University Hospital, Germany

Loïc Verlingue, Centre Léon Berard, Lyon

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