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3rd edition

ARTIFICIAL INTELLIGENCE FOR ONCOLOGY

PRESIDENT OF THE CONFERENCE

ARSELA PRELAJ

MILAN, ITALY

8-9 MAY 2025

& ONLINE

Fondazione IRCCS
Istituto Nazionale dei Tumori

Sistema Socio Sanitario
Regione Lombardia

POLITECNICO
MILANO 1863

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
PIETRO AULETTA
IPOP Onlus
EMANUELE MONTI
Presidente Commissione Sostenibilità sociale, casa e famiglia Regione Lombardia

1 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*

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

2 SESSION

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 PAVERD, *UK*

15:45 Discussion
15:55 Coffee Break

3 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

4 SESSION

AI FOR IMAGING

Chairs: ALESSANDRO CICCHETTI, 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

5 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 Revolutionizing Patient Care: Novartis and the Power of AI
NAIARA ALTUNA, *Innovative Partnerships &*
Solution Head Novartis

15:15 Accelerating Precision Oncology with
Multimodal Data Analytics
HAMZA BOULAALA, *Data Scientist, Multimodal R&D,*
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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IASLC INTERNATIONAL ASSOCIATION FOR THE STUDY OF LUNG CANCER

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/
For information: **segreteria@events-communication.com**

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

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 FondazioneIRCCS 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

Julien Vibert, Gustave Roussy, Villejuif, France

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