



UNIVERSITÀ
CATTOLICA
del Sacro Cuore

Gemelli



Fondazione Policlinico Universitario Agostino Gemelli IRCCS
Università Cattolica del Sacro Cuore

ART

Advanced Radiation
Therapy



Modern Radiation Oncology: multidisciplinary in the era of OMICS and AI guided oncology

32° RESIDENTIAL COURSE

17 | 18 | 19 October 2022

Fondazione Policlinico Universitario A. Gemelli IRCCS
Largo A. Gemelli, 8 - Roma - Aula Brasca

Scientific Coordinators *V. Valentini, M.A. Gambacorta, L. Indovina*
Honorary Presidents *C.A. Perez, N. Cellini*



HT.ART

- ▶ Molise.ART - 16 September 2022
- ▶ Miulli.ART - 30 September 2022
- ▶ MaterOlbia.ART - 7 October 2022



Associazione Italiana
Radioterapia e Oncologia clinica



EFOMP
EUROPEAN FEDERATION OF ORGANISATIONS FOR MEDICAL PHYSICS

Endorsed by¹
ESTRO



17 October 2022

ONSITE and LIVE STREAMING

08.00 - 08.45 **ONSITE REGISTRATION**
COURSE OPENING

08.45 - 09.15 **Authorities greetings**

A. Gasbarrini, G. Scambia (I), C.A. Perez (USA), N. Cellini (I)

Presidents of Scientific Societies: **AIRO, AIFM, AITRO, ESTRO, EFOMP**

09.15 - 09.30 **Course tips and tricks** *V. Valentini, M.A. Gambacorta, L. Indovina (I)*

09.30 - 09.45 **SOD Italia Running Team - SOD ITALIA ONLUS/APS** *D. Vitali (I)*

COURSE AIM LECTURE

Moderators: *D. Genovesi, M.E. Rosetto (I)*

09.45 - 10.00 **Multidisciplinary approach in the omics and AI era** *M.A. Gambacorta (I)*

OPENING LECTURE

Moderators: *A.G. Morganti, F. Valvo (I)*

10.00 - 10.30 **Bioprinting to modelize response to Radiation Oncology** *F. Paris (F)*

10.30 - 11.00 **Coffee Break**

SESSION 1 Metrics: omics science in modern oncology:
What reliable supports for clinical decisions?

Moderators: *L. Livi, F. Deodato (I)*

11.00 - 11.15 **Omics applied in modern oncology: methods and general applications**
G. Tortora (I)

11.15 - 11.30 **Radiomics: methods and general applications** *E. Sala (I)*

11.30 - 11.45 **Dosomics: methods and general applications** *L. Placidi (I)*

11.45 - 12.00 **Omics applied to host response: methods and general applications**
R. De Maria Marchiano (I)

12.00 - 12.15 **Q&A** *G. Macchia (I)*

SESSION 2 Metrics: AI applications in modern oncology:
What reliable supports for clinical decisions?

Moderators: *C. Aristei, S. Pergolizzi (I)*

12.15 - 12.30 **AI in modern Imaging** *A. Jiménez Pastor (E)*

12.30 - 12.45 **AI in modern Surgery** *S. Alfieri (I)*

12.45 - 13.00 **AI in modern Pathology** *I. Nagtegaal (NL)*

13.00 - 13.15 **Omics and AI to novel trial address** *D. Lorusso (I)*

13.15 - 13.30 **Q&A** *G. Chiloiro (I)*

13.30 - 14.30 **Light lunch**

LECTURE 1 Moderators: *S. Magrini, F. Alongi, C. Cavedon (I)*
14.30 - 15.00 **Personalized oncology: dream or reality?** *P. Lambin (NL)*

**SESSION 3 Metrics: AI applications in modern oncology:
What reliable support for clinical decisions?**

Moderators: *M.F. Osti, M. Buglione di Monale e Bastia (I)*

15.00 - 15.15 **AI in Medical Oncology** *L. Licitra (I)*

15.15 - 15.30 **AI in modern Radiation Oncology (Clinician's perspective)** *J.E. Bibault (F)*

15.30 - 15.45 **AI in modern Radiation Oncology (Physicist's perspective)** *G.J. Meijer (NL)*

15.45 - 16.00 **AI applications for Data management** *A. Dekker (NL)*

16.00 - 16.15 **Q&A** *N. Dinapoli (I)*

16.15 - 16.30 **Break**

16.30 - 18.00 **LABORATORY (SMALL GROUPS)**

LAB 1 - RADIATION THERAPY TECHNOLOGISTS: Patient preparation and set-up management in the era of AI: external beam radiotherapy
P. Cornacchione, M. Bianchi, G.Turco, C. Di Blasio

LAB 2 - MEDICAL PHYSICISTS: Treatment Planning in the AI and Omics Era: their point of view
L. Placidi, D. Cusumano, S. Cilla, M. Nardini, G. Stimato, G. Meffe, E. Placidi

LAB 3 - RADIATION ONCOLOGISTS: Omics guided radiotherapy prescription. Clinical tools for external beam: the colon-rectal experience. Clinical tools for interventional radiotherapy: ENT, Gyn and Skin experience
R. Autorino, L. Boldrini, G. Chiloiro, N. Dinapoli, B. Fionda, V. Lancellotta, C. Mazzarella, C. Nero, A. Romano, L. Tagliaferri

LECTURE 2 Moderator: *M. Elefanti (I)*
18.00- 18.30 **AI and omics science impact on Health Systems** *Y. Lievens (B)*





FOCUS ON

Moderators: *S. Ramella, V. Tombolini (I)*

08.40 - 09.00 **TKI inhibitors and new drugs in lung cancer: omics driven prescription and combination with radiation oncology** *C. Le Pechoux (F)*

LECTURE 3

Moderators: *G. Sanguineti, A. Fiorentino (I)*

09.00 - 09.30 **How are Omics and AI changing radiotherapy practice? The ESTRO Perspective** *A. Kirby (UK)*

SESSION 4 Actions: AI and omics current applications: practice impact and next steps

Moderators: *M. Mangoni, G.C. Mattiucci (I)*

09.30 - 09.45 **AI to drive clinical trials** *S. Kyriazakos (DK)*

09.45 - 10.00 **Omics to drive clinical trials** *E. Fokas (D)*

10.00 - 10.15 **Omics and AI from trial to practice** *K. Haustermans (B)*

10.15 - 10.30 **Omics and AI what patient perceives?** *L. Dinapoli (I)*

10.30 - 10.45 **Q&A** *E. Meldolesi (I)*

10.45 - 11.15 **Break**

11.15 - 12.45 LABORATORY (SMALL GROUPS)

LAB 1- RADIATION THERAPY TECHNOLOGISTS: Patient preparation and set-up management in the era of AI: interventional radiotherapy *P. Cornacchione, C. Lafaenza, A. Porcelli, G. Nicolini*

LAB 2- MEDICAL PHYSICISTS: Treatment Planning in the AI and Omics Era: their point of view *L. Placidi, D. Cusumano, S. Cilla, M. Nardini, G. Stimato, G. Meffe, E. Placidi*

LAB 3- RADIATION ONCOLOGISTS: Omics guided radiotherapy prescription. Clinical tools for external beam: the colon-rectal experience. Clinical tools for interventional radiotherapy: ENT, Gyn and Skin experience *R. Autorino, L. Boldrini, G. Chiloiro, N. Dinapoli, B. Fionda, V. Lancellotta, C. Mazzarella, C. Nero, A. Romano, L. Tagliaferri*

LECTURE 4

Moderators: *M. Scorsetti, E. Russi (I)*

12.45 - 13.15 **Omics and AI driven radiation oncology in Oligometastatic patients** *M. Guckenberger (CH)*

13.15 - 14.15 **FOCUS ON (with lunch box)**

Moderator: *L. Tagliaferri (I)*

Immunotherapy approaches in the Omics Era: focus on Genitourinary cancer *G. Schinzari (I)*

SESSION 5 Actions: Selection beyond the standard: practice impact and next steps

Moderators: *F. Paiar, L. Indovina (I)*

14.15 - 14.30 **Omics and AI for MRLINAC** *S. Corradini (D)*

14.30 - 14.45 **Omics and AI for PROTON** *F. Hennings (D)*

14.45 - 15.00 **Omics and AI for FLASH** *J. Bourhis (CH)*

15.00 - 15.15 **Q&A** *L. Boldrini (I)*

15.15 - 15.45 **Break**

SESSION 6 OMICS and AI in H&N CANCER

Moderators: *G. Paludetti, A. Cassano (I)*

15.45 - 16.00 **Omics driven radiotherapy approaches** *V. Grégoire (F)*

16.00 - 16.15 **AI planning approaches** *N. Jornet (E)*

16.15 - 16.30 **Omics driven systemic treatments** *P.L. Bonomo (I)*

16.30 - 16.45 **AI driven surgery** *J. Galli (I)*

16.45 - 17.00 **Q&A** *F. Miccichè (I)*

SESSION 7 OMICS and AI in LUNG cancer

Moderators: *S. Margaritora, R.M. D'Angelillo (I)*

17.00 - 17.15 **Omics driven radiotherapy approaches** *E. Troost (D)*

17.15 - 17.30 **AI planning approaches** *G. Gagliardi (SW)*

17.30 - 17.45 **Omics driven systemic treatments** *E. Bria (I)*

17.45 - 18.00 **AI driven surgery** *F. Lococo (I)*

18.00 - 18.15 **Q&A** *M. Massacesi (I)*





19 October 2022

ONSITE and LIVE STREAMING

LECTURE 5

Moderators: *M.A. Gambacorta, M. Santarelli (I)*

08.30 - 09.00 **Transcending Tumors: A solution to a doctor's dilemma** *A. Scafì (UK)*

SESSION 8 OMICS and AI in PROSTATE CANCER

Moderators: *V. Donato, S. Arcangeli (I)*

09.00 - 09.15 **Omics driven radiotherapy approaches** *P. Hoskin (UK)*

09.15 - 09.30 **AI approaches in interventional radiotherapy** *G. Kovacs (D)*

09.30 - 09.45 **Omics driven systemic treatments** *R. Iacovelli (I)*

09.45 - 10.00 **Omics and AI driven approaches in recurrent diseases** *B. Jerezczek (I)*

10.00 - 10.15 **Q&A** *F. Cellini (I)*

LECTURE 6

Moderators: *M. Krenqli, G. Mantello (I)*

10.15 - 10.45 **How innovation in radiation oncology changes educational models**

J. Eriksen (DK)

10.45 - 11.15 **Break**

SESSION 9 OMICS and AI in WOMEN'S CANCER

Moderators: *C. Aristei, F. Marazzi (I)*

11.15 - 11.30 **Omics driven radiotherapy approaches** *E. Rodriguez Tomas (E)*

11.30 - 11.45 **AI planning approaches** *S. Cilla (I)*

11.45 - 12.00 **Omics driven systemic treatments** *L. Visani (I)*

12.00 - 12.15 **Omics driven pathology** *G.F. Zannoni (I)*

12.15 - 12.30 **Q&A** *V. Masiello (I)*

LECTURE 7

Moderators: *C. Iotti, R. Pacelli (I)*

12.30 - 13.00 **AI guided olistic approach to cure by art** *V. Valentini (I)*

13.00 - 14.00 **Light lunch**

SESSION 10 OMICS and AI in PEDIATRICS

Moderators: *F. Locatelli, U. Ricardi (I)*

14.00 - 14.15 **Omics perspective for pediatric patients: physical challenges** *D. Verellen (B)*

14.15 - 14.30 **Omics driven systemic treatments** *A. Mastronuzzi (I)*

14.30 - 14.45 **AI driven distraction techniques in pediatric patients**

E. Marconi, D. Scarponi (I)

14.45 - 15.00 **AI and modern pediatric radiotherapy** *I. Fagerström Kristensen (S)*

15.00 - 15.15 **Q&A** *S. Chiesa (I)*

LECTURE 8

Moderators: P.C. Gentile, D. Musio, (I)

15.15 - 15.45 **Microbiota: what reliable support for clinical decisions?** G. Ianiro (I)

15.45 - 16.00 **CLOSING REMARKS** V. Valentini, M.A. Gambacorta, L. Indovina, (I)

16.00 - 16.30 **EVALUATION & QUESTIONNAIRES**

Faculty

ALFIERI Sergio	Roma I	KIRBY Anna	Sutton UK
BIBAULT Jean- Emmanuel	Paris F	KOVACS Gyoergy	Lübeck D
BONOMO Pier Luigi	Firenze I	KYRIAZAKOS Sofoklis	Aarhus DK
BOURHIS Jean	Lousanne CH	LAMBIN Philippe	Maastricht NL
BRIA Emilio	Roma I	LE PECHOUX Cecile	Paris F
CILLA Savino	Campobasso I	LICITRA Lisa	Pavia e Milano I
CORRADINI Stefanie	Muenchen D	LIEVENS Yolande	Gent B
DE MARIA MARCHIANO Ruggero	Roma I	LOCOCO Filippo	Roma I
DEKKER Andre	Maastricht NL	LORUSSO Domenica	Roma I
DINAPOLI Loredana	Roma I	MARCONI Elisa	Roma I
ERIKSEN Jesper Grau	Aarhus DK	MASTRONUZZI Angela	Roma I
FAGERSTROM KRISTENSEN Ingrid	Lund SW	MEIJER Gert	Utrecht NL
FOKAS Emmanouil	Frankfurt am Main D	NAGTEGAAL Iris	Nijmegen NL
GAGLIARDI Giovanna	Stockholm S	PARIS Francois	Nantes F
GALLI Jacopo	Roma I	PLACIDI Lorenzo	Roma I
GAMBACORTA Maria Antonietta	Roma I	RODRIGUEZ TOMAS Elisabet	Reus S
GREGOIRE Vincent	Lyon F	SALA Evis	Roma I
GUCKENBERGER Matthias	Zurich CH	SCAFI Alessandro	Londra UK
HAUSTERMANS Karin	Leuven B	SCARPONI Dorella	Bologna I
HENNINGS Fabian	Dresden D	SCHINZARI Giovanni	Roma I
HOSKIN Peter	Manchester UK	TORTORA Giampaolo	Roma I
IACOVELLI Robert	Roma I	TROOST Esther	Dresden D
IANIRO Gianluca	Roma I	VALENTINI Vincenzo	Roma I
JERECZEK Barbara	Milano I	VERELLEN Dirk	Brussels B
JIMENEZ – PASTOR Ana	Valencia E	VISANI Luca	Firenze I
JORNET Nuria	Barcelona E	ZANNONI Gian Franco	Roma I



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CPS (ECM) Training Objective no. 18: Technical professional contents (knowledge and skills) specific to each profession, each specialization and each ultra-specialist activity, including rare diseases and gender medicine.

THE COURSE IS ACCREDITED FOR: **Radiation Oncologists, Medical Oncologists, Medical Physicists, RTTs/TRs.**

There are **20 CPS (ECM)** credits for those who will attend the course in-person but remember that the requirement to receive the credits is the possession of a degree and specialization, otherwise you can follow the course via web.

The exhibition hall is open from **17-19 October 2022**, all day, with the exception of lesson time.

For those interested, it is possible to register by **September 15, 2022** on the website of the Catholic University of the Sacred Heart: www.unicatt.it, or, directly at this link: https://fopecom-rm.unicatt.it/fopecomonline/default_eng.aspx?Edizione=1&IdEvento=9034

The registration fee for the course is **€ 250.00**. For members **AIRO, AIFM, AITRO, ESTRO, EFOMP** members it is **€ 150.00**.

We have also provided free registration for final-year students of Medical Physics, final-year students of the bachelor's degree in RTTs/RTs, and residents of the last two years in Radiotherapy and Medical Oncology (to be written in the registration notes). Due to limited classroom capacity, in-person attendance will be accepted on a first-come, first-served basis.

With the unconditional contribution of



Scientific Advisory Board 2022: M. Balducci, F. Cellini, F. Deodato, G.C. Mattiucci, F. Miccichè, A.G. Morganti, G. Macchia, A. Fiorentino

Scientific Secretariat 2022: L. Boldrini, L. Tagliaferri, C. Casà