



**CNAO**  
Centro Nazionale di Adroterapia Oncologica



**HITRI**  
Heavy Ion Therapy Research Integration



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008548

## HYBRID CME EVENTS

# Hadrontherapy: status and perspectives. Development of a hadrontherapy facility: learning from the existing<sup>•</sup> *and* Scientific day on BNCT

OCTOBER **11TH** | **12TH** | **13TH** 2023

PAVIA & ONLINE

**Directors:** Ester Orlandi, Saverio Altieri, Sotirios Charisopoulos

Event in conjunction with the IAEA-CNAO  
Regional Workshop on Hadrontherapy under  
the Technical Cooperation project RER6039

In collaboration with



Fondazione IRCCS  
Policlinico San Matteo

Sistema Socio Sanitario



Regione  
Lombardia



## OBJECTIVES

Thanks to the participation of a panel of nationally and internationally renowned speakers, the meeting aims to:

- Expanding participants' knowledge about clinical indications and advantages of hadrontherapy in an international overview and perspectives
- Informing participants on managerial, technical and clinical aspect of an hadrontherapy facility
- Improving understanding on resource requirements, challenges, economical and social implications of hadrontherapy
- Presenting status and perspectives of a new research clinical modality, BNCT (Boron Neutron Capture Therapy)

## REGISTRATION

Participation to the course is free.

It is possible to register online at the address <https://fad.accmed.org/course/info.php?id=1325>.

THE EVENT IS HYBRID: IN PERSON AND ONLINE.

**The meeting venue has limited seating and registration for the in-person participation will be accepted on a first-come-first-served basis. Once maximum capacity has been reached we will close the registration for the event in presence.**

**ONLY PERSONS ADMITTED TO PARTICIPATE IN PRESENCE WILL BE INFORMED WITH AN OFFICIAL EMAIL WITHIN THE MIDDLE OF SEPTEMBER.**

## ADDRESSED TO

The course is addressed to all health professions.

## CME

Based on the in force regulations approved by the CNFC, Accademia Nazionale di Medicina (provider n. 31) will assign to the activity CME:

**12 CME points** (in-class course 11th -12th october)

**18 CME points** (webinar live 11th -12th october)

**5 CME points** (in-class course 13th october)

**7,5 CME points** (webinar live 13th october)

Training objective: professional and technical content (knowledge and skills) specific to each profession, specialisation and highly specialised activity. Rare disease.

The credit certification is subject to:

- Professions/specializations should correspond to those which have been accredited for CME
- attendance at the 100% of the event
- the completion of the Meeting evaluation online form;
- completion of the final test (at least 75% of correct answers). 1 attempt admitted for in-class course, 5 attempts admitted for live webinar.

The test and the meeting evaluation form must be completed within 3 days from the end of the event.

# HADRONTHERAPY: STATUS AND PERSPECTIVES. DEVELOPMENT OF A HADRONTHERAPY SERVICE: LEARNING FROM THE EXISTING PROGRAM

WEDNESDAY, OCTOBER 11th

**09.00** Participant Registration

**09.15** Welcome Addresses

## **SESSION 1: CLINICAL ACTIVITIES**

*Chair: Lisa Licitra*

**09.45** **Keynote lecture Historical and scientific evolution of hadrontherapy**

*Ugo Amaldi*

**10:15** **Hadrontherapy in the context of cancer care in Italy**

*Marco Krengli*

**10:35** **Hadrontherapy vs X-ray therapy: clinical aspects, patient pathway and clinical QA considerations**

*Ester Orlandi*

## **Clinical indications:**

**10:55** **Chordoma and Chondrosarcoma**  
*Piero Fossati*

**11:15** *Coffee Break*

**11:30** **Head and Neck cancers**  
*Barbara Vischioni*

**11:50** **Central Nervous System tumors**  
*Semi Harrabi*

**12:10** **Gastroenteric and gynaecological tumors**  
*Amelia Barcellini*

**12:30** **Pediatric cancers**  
*Sabina Vennarini*

**12:50** **Heavy ions for prostate cancer: how to manage pelvic nodes?**  
*Mack Roach*

**13:10** *Lunch*



## **SESSION 2: CLINICAL ACTIVITIES**

*Chair: Mario Ciocca*

**14:30 Clinical research and future prospective**

*Roberto Orecchia*

**14:50 Clinical dosimetry and quality assurance**

*Markus Stock*

**15:10 Patient clinical workflow including image guidance**

*Guido Baroni*

**15:30 Treatment planning: comparing techniques and standards**

*Silvia Molinelli*

**15:50** *Coffee Break*

**16:05 Radiobiology: current trend and future prospective**

*Michael Story*

**16:25 Novel approaches in particle therapy**

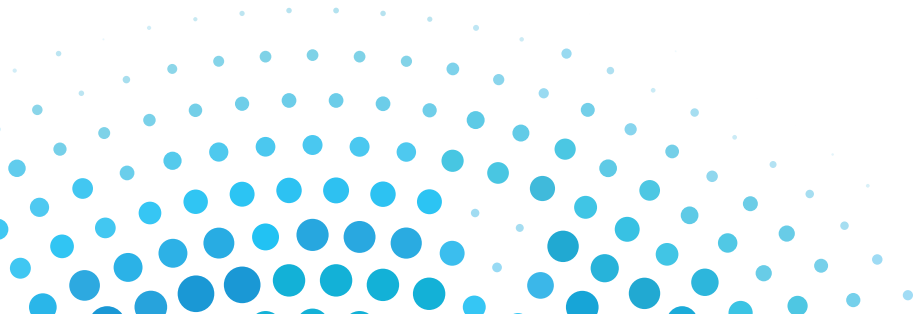
*Andrea Mairani*

**16:45 Implementing a carbon ion facility: the Mayo Clinic Project**

*Laura Vallow*

**17:05** *Closing remarks*

**19:30** *Social Event*



**SESSION 3: HEALTH POLICY CONTEXT AND HEALTH ECONOMICS OF HADRON THERAPY**

*Chair: Andrea Filippi*

**09:00 ENLIGHT (European Network for Light Ion Hadron Therapy) and its role in Hadron Therapy**

*Manjit Dosanjh*

**09:20 Academia meets Industry: IP, communication, managing expectations**

*Manuela Cirilli*

**09:40 Funding and health economic**

*Fabio Amatucci*

**10:00 Financial toxicity: PSI experience**

*Barbara Bachtiary*

**10:20 Cost benefit analysis: the CNAO case**

*Maria Vittoria Livraga*

**10:40 Coffee Break**

**SESSION 4: ORGANIZATION AND OPERATION OF MULTI PARTICLE THERAPY FACILITY**

*Chair: Marco Cianchetti*

**11:00 The Heidelberg Ion Beam Therapy Center - Technology, Clinical Application and Research**

*Thomas Haberer*

**11:20 The CNAO facility: operation and maintenance**

*Giuseppe Venchi*

**11:40 The MedAustron facility**

*Christoph Kurfuerst*

**12:00 The Marburg facility**

*Klemes Zink*

**12:20 New accelerator design: NIMMS**

*Maurizio Vretenar*

**12:40 The vision of the SEEIIST project**

*Leander Litov*

**13:00 Carbon facilities outside Europe with focus on USA/NCI programme**

*Arnold Pompos*

**13:20 Lunch**

## **SESSION 5: RESEARCH & DEVELOPMENT IN HADRON THERAPY**

*Chair: Pablo Cirrone*

**14:30 Building capacity through the IAEA  
programs**

*Sotirios Charisopoulos*

**14:50 HITRIplus project overview**

*Angelica Facoetti*

**15:10 Imaging: current trend and future  
perspectives**

*Katia Parodi*

**15:30 Flash Therapy with light ions**

*Emanuele Scifoni*

**15:50 Coffee Break**

**16:05 Upright positioning and arc therapy**

*Christian Graeff*

**16:25 New Gantry for ions**

*Marco Pullia*

**16:45 New technologies: superconducting  
magnets**

*Lucio Rossi*

**17:05 Discussion**

**17:30 Visit of CNAO**



## SCIENTIFIC DAY ON BNCT

# PROGRAM

FRIDAY, OCTOBER 13th

### BNCT: SESSION 1

*Chair: Saverio Altieri – Paolo Pedrazzoli*

- 09.00** **Hadron therapy in radiation oncology and why BNCT is a paradigm shift**  
*Wolfgang Sauerwein*
- 09.20** **Clinical BNCT experience with accelerators**  
*Minoru Suzuki*
- 09.40** **BNCT clinical trials**  
*Peeter Karihtala*
- 10:00** **Progress to clinical adoption of accelerator based BNCT**  
*Lisa Licitra*
- 10:20** **Development of new novel BNCT drugs**  
*Kendall Morrison*
- 10:40** **Online boron dose distribution imaging**  
*Nicoletta Protti*
- 11:00** *Coffee Break*

### BNCT: SESSION 2

*Chair: Valerio Vercesi – Barbara Croesi*

- 11:20** **Radiobiological characterization of a BNCT beam**  
*Mitsuko Masutani*
- 11:40** **Dosimetry in BNCT**  
*Stuart Green*
- 12:00** **Micro-dosimetry of a neutron BNCT beam**  
*Valeria Conte*
- 12:20** **Treatment planning for BNCT**  
*Ian Postuma*
- 12:40** **Discussion**
- 13:00** *Lunch*



### **BNCT: SESSION 3**

*Chair: Stefano Agosteo – Laura Locati*

**14:00 Structural basis of cancer cells uptake of boronated compounds**

*Vittorio Bellotti*

**14:20 Accelerator based neutron sources for BNCT**

*Andres Kreiner*

**14:40 Development of the IAEA publication 'Advances in Boron Neutron Capture Therapy'**

*Ian Swainson*

**15:00 BNCT@CNAO**

*Sandro Rossi*

**15:20 Discussion and closing remarks**

**15:40 Visit of LENA**





## DIRECTORS

**Ester Orlandi** (CNAO, Pavia, I)

**Saverio Altieri** (University of Pavia, I)

**Sotirios Charisopoulos** (IAEA, Vienna, AT)

## CHAIRMEN AND SPEAKERS

**Stefano Agosteo** (Politecnico, Milan, I)

**Ugo Amaldi** (TERA, Geneva, CH)

**Fabio Amatucci** (Bocconi University, Milan, I)

**Barbara Bachtiry** (Paul Scherrer Institute, Villigen, CH)

**Amelia Barcellini** (CNAO, Pavia, I)

**Guido Baroni** (Politecnico, Milan, I)

**Vittorio Bellotti** (Policlinico San Matteo, Pavia, I)

**Marco Cianchetti** (APSS Trento, I)

**Manuela Cirilli** (CERN, Geneva, CH)

**Pablo Cirrone** (INFN, Catania, I)

**Mario Ciocca** (CNAO, Pavia, I)

**Valeria Conte** (INFN, Legnaro, I)

**Barbara Croesi** (Policlinico San Matteo, Pavia, I)

**Manjit Dosanjh** (Oxford University, UK)

**Angelica Facchetti** (CNAO, Pavia, I)

**Andrea Filippi** (Policlinico San Matteo, Pavia, I)

**Piero Fossati** (MedAustron, Wiener Neustadt, AT)

**Christian Graeff** (GSI Darmstadt DE)

**Stuart Green** (University Hospital, Birmingham, UK)

**Thomas Haberer** (HIT, Heidelberg, D)

**Semi Harrabi** (Heidelberg University, DE)

**Peeter Karihtala** (HUS, Helsinki, FI)

**Andres Kreiner** (CNEA, Buenos Aires, AR)

**Marco Krengli** (University of Padua and IOV Veneto, Padua, I)

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**Andrea Mairani** (Heidelberg University, DE)

**Mitsuko Masutani** (Nagasaki University, JP)

**Silvia Molinelli** (CNAO, Pavia, I)

**Kendall Morrison** (TAE Life Sciences, Santa Monica, USA)

**Roberto Orecchia** (IEO, Milan, I)

**Katia Parodi** (Ludwig-Maximilians-University, Munich, DE)

**Paolo Pedrazzoli** (Policlinico San Matteo, Pavia, I)

**Arnold Pompos** (UT Southwestern, Dallas, USA)

**Ian Postuma** (INFN, Pavia, I)

**Nicoletta Protti** (University of Pavia, I)

**Marco Pullia** (CNAO, Pavia, I)

**Mack Roach** (UCSF, San Francisco, USA)

**Lucio Rossi** (University of Milan, I)

**Sandro Rossi** (CNAO, Pavia, I)

**Wolfgang Sauerwein** (University Hospital, Essen, DE)

**Emanuele Scifoni** (TIFPA-INFN, Trento, I)

**Markus Stock** (MedAustron, Wiener Neustadt, AT)

**Michael Story** (University of Texas, Dallas, USA)

**Minoru Suzuki** (KURNS, Kyoto University, JP)

**Ian Swainson** (Vienna, AT)

**Laura Vallow** (Mayo Clinic, Jacksonville, USA)

**Giuseppe Venchi** (CNAO, Pavia, I)

**Sabina Vennarini** (INT, Milan, I)

**Valerio Vercesi** (INFN, Pavia, I)

**Barbara Vischioni** (CNAO, Pavia, I)

**Maurizio Vretenar** (CERN, Geneva, CH)

**Klemes Zink** (MIT, Marburger, DE)



## MEETING VENUE

### CNAO

Via Erminio Borloni, 1  
Pavia

## ORGANIZER

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