



# ESTRO

# 11<sup>th</sup> AROI-ESTRO

**Teaching Course on  
Advanced Technologies in  
Radiation Oncology**

**Theme:  
Closing the gap with advancing technology**

**5<sup>TH</sup> - 8<sup>TH</sup> DECEMBER 2024  
Auditorium, AIIMS, Patna**

**Early bird registration has been extended  
till 31<sup>st</sup> October**



## PRESIDENT'S MESSAGE

**Dear Guests, Faculty and Participants,**

It is with great pleasure and honour that I invite you to the **AROI-ESTRO Teaching Course Advanced Technologies in Radiation Oncology with theme “Closing the Gap with Advancing Technology”**, taking place from **December 5th to 8th, 2024, at the AIIMS Patna.**

The course that is being organised at Patna is a testament to our collective commitment in bringing the benefits of advanced radiation techniques to this part of the world. It is indeed the result of a collaborative effort of the AROI-ESTRO and AROI-Bihar Chapter and AIIMS Patna.

As the president of the AROI-Bihar Chapter, it is my honour and privilege to welcome distinguished international and national faculty and radiation oncologists from different parts of the world for this course. I am sure that at the end of the course, the participants will immensely benefit from the teachings and deliberations of the course. The course has been designed by leading experts to cover the topic of advanced technologies in radiation therapy, with lots of emphasis on the clinical aspects. It is expected that at the end of the courses, the participants will be able to acquire knowledge of the topics covered and be confident in implementing these technologies in their respective departments.

I extend my deepest gratitude to the faculties of the course, the office bearers of the AROI, India, and AROI-Bihar chapters, and the local organizing committee, particularly Dr Pritanjali Singh, Head of the Department of Radiation Oncology, AIIMS, Patna for their efforts in organizing the course at the AIIMS Patna.

The city of Patna is an ancient city, and there are many important historical places, museums, and tourist attractions to visit as well. I, along with the members of the AROI Bihar Chapter and the local organizing committee, look forward to welcoming you to Patna and wish that the course will be an enriching experience for the participants.

Warm regards,

Dr Rajiv Ranjan Prasad

President, AROI-Bihar Chapter and

Director- Radiation oncology Cancer Institute

JP Medanta Hospital, Patna, India





**Prof. (Dr.) Gopal Krushna Pal**  
**Chief Patron**  
**Director, AIIMS, Patna**



**Dr. B Sanyal**  
**Patron**



**Dr. J K Singh**  
**Patron**



**Prof. Dr. Prem Kumar**  
**Patron**



**Dr. P N Pandit**  
**Patron**



**Prof. Dr. Sadhana Sharma**  
**Patron**



**Dr. Rajesh Vashistha**  
**Chair - AROI**



**Dr. Manoj Gupta**  
**President - AROI**



**Dr. V Srinivasan**  
**Secretary - AROI**



**Dr. S N Senapati**  
**President Elect-AROI**



**Prof. Ben Heijmen**  
**ESTRO Course Director**



**Dr. Indranil Mallick**  
**AROI Course Director**



**Dr. Pritanjali Singh**  
**Course Coordinator**



**Dr. Rajiv Ranjan Prasad**  
**President AROI Bihar Chapter**



**Dr. Prof. Rajesh Singh**  
**Secretary AROI Bihar Chapter**



## Chief Patron

Prof.(Dr) Gopal  
Krushna Pal  
Director AIIMS Patna

## Patrons

Dr B Sanyal  
Dr J K Singh  
Dr P N Pandit  
Dr Prem Kumar  
Dr Sadhana Sharma

## Mentors

Dr Sudhakar Singh  
Dr Seema Devi  
Dr Shekhar Kesari  
Dr Anita Kumari  
Dr Mukesh Bharti

## Scientific Committee

Dr Vineeta Trivedi

Dr Dinesh Kumar Sinha  
Dr Richa Chauhan  
Dr Rita Rani  
Dr Usha Singh  
Dr Ravi Byahut  
Dr Sneha Jha  
Dr Richa Madhavi  
Dr Kunal Kishor  
Dr Shraddha Raj  
Dr Mukesh Bharti  
Dr Amrita Rakesh  
Dr Shiv Mishra

## Transport & accommodation

Dr Anil Jaiswal  
Mr Sourab Kumar  
Mr Abu Musa Shah  
Mr Saurabh Kumar

## Registration

## Committee

Dr Nilesh Mani  
Dr Kanchan  
Dr Shanmuga Priya  
Dr Deepan S  
Mr Ranjan Kumar  
Mr. Rajhans Kumar

## Hall Management

Dr Harikesh Bahadur  
Singh,  
Dr Meenakshi Mishra  
Dr Ravind kumar Yadav  
Mr Samyak Chauhan  
Dr Ritesh  
Ms Gazala Parveen

## Food & Beverage

## Committee

Dr Ravi Roushan  
Dr Kodela Jahanvi



## TARGET GROUP

### The course is primarily aimed at:

- Radiation oncologists, medical physicists and radiation therapists/technologists early in their career who are implementing or planning to implement advanced technologies in their practice
- Trainees in radiation oncology or radiation physics

### The course is also suitable for:

- Experienced clinicians and physicists who are eager to update their knowledge on new technical aspects of radiotherapy.
- Radiation technologists having a strong interest in the application of physics and technology in radiotherapy.
- Researchers in radiotherapy, radiotherapy physics and radiotherapy technology, e.g. pursuing a Master or PhD degree.

As the focus is on clinical application, the teachers' team consists of radiation oncologists, medical physicists and technologists.

## COURSE DIRECTORS

**ARO:** Dr Indranil Mallick, Sr. Consultant Radiation Oncologist, Tata Medical Center, Kolkata

**ESTRO:** Prof Ben Heijmen, Professor of Medical Physics, Erasmus MC, Rotterdam, the Netherlands



## COURSE AIM

The course will be a combination of didactic lectures and interactive clinical sessions

The overall aim of this course is to explore how new technologies can be best used for patient benefit, with a focus on scientific evidence.

- The lectures aim to provide multidisciplinary knowledge and understanding of:
- The clinical rationale for the use of advanced technologies in radiation therapy
- Errors and uncertainties and how multimodality imaging, respiratory motion management, MR linacs, surface guidance and adaptive radiotherapy are used to mitigate these.
- IMRT delivery techniques and plan evaluation
- Principles and applications of stereotactic (body) radiotherapy, and particle therapy, use of automation and artificial intelligence in radiation oncology contouring and planning
- An outlook to possible future new technologies, like FLASH, heavy ions and grid therapy

Complimentary to the lectures, this course has interactive clinical sessions where expert oncologists, physicists and radiographers will discuss developing protocols for the clinical implementation of advanced technologies, including IGRT, adaptive RT, cranial SRS and SBRT.

## LEARNING OUTCOMES

By the end of this course participants should be able to:

- Discuss and select modern treatment techniques based on their pros and cons
- Select physics and technical measures that enhance effective and safe application of radiation therapy.
- Discuss approaches for gathering scientific evidence for clinical application of novel technologies
- Get an understanding of the use and applications of novel emerging technologies.

## COURSE CONTENT

### Lectures on:

- Modern imaging for treatment planning
- Errors, Margins and Correction Strategies
- Respiratory Motion Management
- IMRT delivery and plan evaluation
- Stereotactic radiotherapy and radiosurgery
- Biophysical models
- Particle therapy
- Adaptive Radiotherapy
- Automation and Artificial Intelligence
- Health technology assessment
- Designing studies to assess new technology
- Novel emerging technologies (Heavy ions, Flash and Grid therapy)

## COURSE CONTENT

### Clinical sessions:

There will be five interactive multidisciplinary clinical sessions, where faculty will coordinate discussion on contouring, plan evaluation, patient specific QA, and imaging protocols in different clinical sites.

- How to develop site-wise protocols for PTV margins and image guidance in your department - Head and Neck Cancers, Gyne and Prostate Cancer
- Lung SBRT (indications, selected contours on Educase, patient selection and dose constraints)
- Cranial SRS (OARs and constraints, gamma-knife or Cyberknife vs linac based, QA)
- Breast DIBH and IMRT
- Liver SBRT (indications, liver toxicity and dose constraints, respiratory motion management during scanning and delivery)

## INTERNATIONAL FACULTY

**Ben Heijmen | Andrew Hope | Mairead Daly**

## NATIONAL FACULTY

**Tejpal Gupta | Anil Anand | Tharmar Ganesh**

**Santam Chakroborty | Pritanjali Singh**

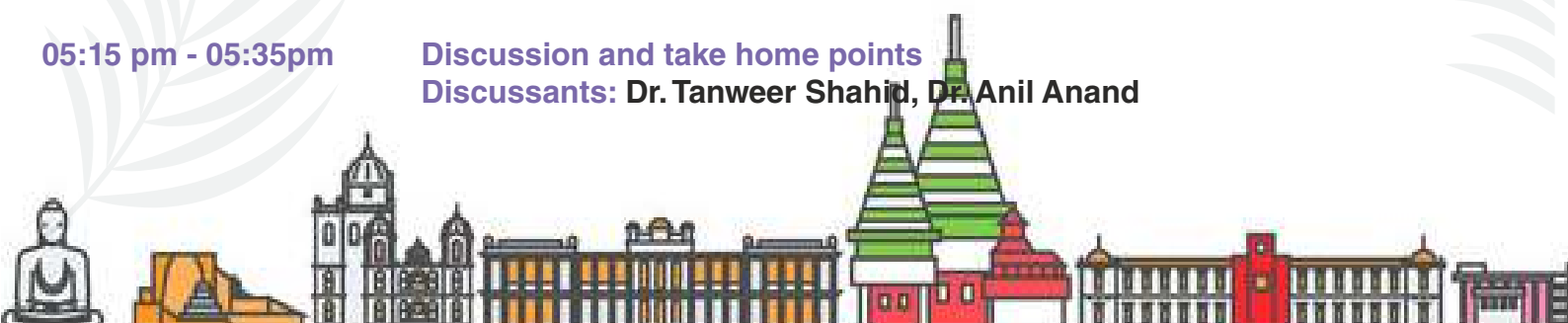
**Jyotirup Goswami | Indranil Mallick | Prakash Umbarkar**

**Sai Subramaniam | Supriya Chopra | Tanveer Shahid**





TIME	TOPIC/FACULTY
09:00 am - 09:10 am	Course Introduction Dr. Ben Heijmen, Dr. Indranil Mallick
09:10 am - 09:40 am	Clinical Rationale for using advanced technologies Speaker: Dr. Andrew Hope
09:40 am - 10:10 am	Principles, opportunities and challenges of incorporating modern imaging in target definition Speaker: Dr. Tejpal Gupta
10:10 am - 10:50 am	Errors and margins in your clinical practice Speaker: Dr. Santam Chakraborty
10:50 am - 11:20 am	Break
11:20 am - 12:00 pm	Correction strategies for interfraction tumor setup variations in external beam radiotherapy Speaker: Dr. Mairead Daly (Dr. Ben Heijmen)
12:00 pm - 12:40 pm	Respiratory Motion Management - Principles and practice Speaker: Dr. Andrew Hope
12:40 pm - 01:00 pm	Discussion and take home points Discussants: Dr. Pritanjali Singh, Dr. Jyotirup Goswami
01:00 pm - 02:00 pm	Lunch
02:00 pm - 02:30 pm	IMRT Delivery techniques Speaker: Dr. Ben Heijmen
02:30 pm - 03:15 pm	IMRT Plan evaluation Speaker: Dr. Indranil Mallick
03.15 pm -3.45 pm	Break
03:45 pm - 05:15 pm	Clinical Session: How to develop sitewise protocols for PTV margins and image guidance in your department - Head and Neck Cancers, Gyne and Prostate Cancer Speaker: Dr. Mairead Daly / Dr. Prakash Umbarkar (Dr. Indranil / Dr. Andrew / Dr. Santam)
05:15 pm - 05:35pm	Discussion and take home points Discussants: Dr. Tanweer Shahid, Dr. Anil Anand



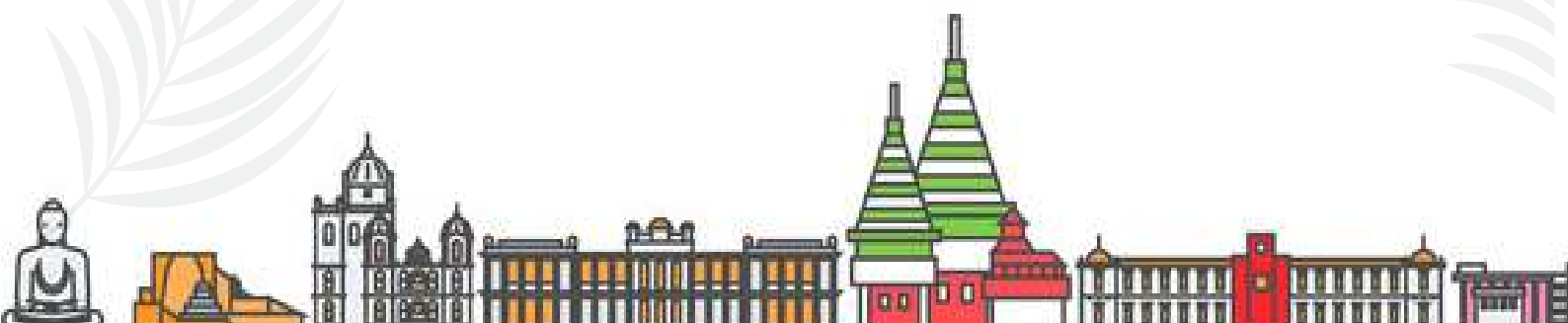
TIME	TOPIC/FACULTY
09:00 am - 09:40 am	Stereotactic (body) radiotherapy - definition, radiobiology, physics and technology Speaker: Dr. Tharmar Ganesh
09:40 am - 10:10 am	Frameless IGRT and Stereotactic RT Speaker: Dr. Andrew Hope
10:10 am - 10:50 am	Introduction to Biophysical models Speaker: Dr. Ben Heijmen
10:50 am - 11:20 am	Break
11:20 am - 11:50 am	Particle therapy - Physics, Technology and Radiobiology Speaker: Dr. Ben Heijmen
11:50 am - 12:40 pm	Particle therapy - Clinical Applications - Opportunities, evidence and challenges Speaker: Dr. Tejpal Gupta
12:40 pm - 01:00 pm	Discussion and take home points Discussants: Dr. Pritanjali Singh, Dr. Tanweer Shahid
01:00 pm - 02:00 pm	Lunch
02:00 pm - 03:20 pm	Clinical Session: Lung SBRT (indications, selected contours and dose constraints)" Speaker: Dr. Andrew Hope
03:20 pm - 03:50 pm	Break
03:50 pm - 05:10 pm	Clinical Session: Cranial SRS (OARs and constraints, gamma-knife vs linac based, QA)" Speaker: Dr. Tejpal Gupta
05:10 pm - 05:30 pm	Discussion and take home points Discussants: Dr. Pritanjali Singh, Dr. Ben Heijmen, Dr. Mairead Daly



TIME	TOPIC/FACULTY
09:00 am - 09:40 am	Surface Guided Radiation Therapy Speaker: Dr. Ben Heijmen
09:40 am - 10:00 am	Adaptive Radiation Therapy principles Speaker: Dr. Indranil Mallick
10:00 am - 10:30 am	CT based adaptive RT - Technology Speaker: Dr. Sai Subramanian
10:30 am - 11:00 am	CT based adaptive RT - Implementation Speaker: Dr. Prakash Umbarkar
11:00 am - 11:30 am	Break
11:30 am - 12:00 pm	MR Linac based adaptive RT - Technology Speaker: Dr. Sai Subramanian
12:00 pm - 12:30 pm	MR Linac based adaptive RT - Implementation Speaker: Dr. Mairead Daly
12:30 pm - 12:50 pm	Adaptive Radiation Therapy - What is the evidence for clinical benefit? Speaker: Dr. Anil Anand
12:50 pm - 01:10 pm	Discussion and take home points Discussants: Dr. Indranil Mallick, Dr. Andrew Hope
01:10 pm - 02:10 pm	Lunch
02:10 pm - 03:30 pm	Clinical Session: Breast DIBH and IMRT Speaker: Dr. Santam Chakraborty
03:30 pm - 03:50 pm	Break
03:50 pm - 05:10 pm	Clinical Session: Liver SBRT (indications, liver toxicity and dose constraints, respiratory motion management during scanning and delivery) Speaker: Dr. Supriya Chopra
05:10 pm - 05:30 pm	Discussion and take home points Discussants: Dr. Tanweer Shahid, Dr. Jyotirup Goswami, Dr. Mairead Daly



TIME	TOPIC/FACULTY
09:00 am - 09:30 am	Automated Treatment Planning Speaker: Dr. Ben Heijmen
09:30 am - 10:00 am	AI in Radiation Oncology: Potential applications Speaker: Dr. Andrew Hope
10:00 am - 10:30 am	AI for contouring Speaker: Dr. Santam Chakraborty
10:30 am - 11:00 am	Transitioning to Advanced Technology: Impact analysis of workflow and clinical analysis Speaker: Dr. Supriya Chopra
11:00 am - 11:30 am	Break
11:30 am - 12:00 pm	How should we design clinical trials to assess new technology? Speaker: Dr. Jyotirup Goswami
12:00 pm - 12:20 pm	On the horizon: Heavy Ions Speaker: Dr. Ben Heijmen
12:20 pm - 12:40 pm	On the horizon: Flash Therapy Speaker: Dr. Tharmar Ganesh
12:40 pm - 01:00 pm	On the horizon: Grid therapy Speaker: Dr. Santam Chakraborty
01:00 pm - 01:20 pm	Discussion and take home points Discussants: Dr. Tanweer Shahid, Dr. Sai Subramanian, Dr. Mairead Daly
01:20 pm - 01:50 pm	Wrap-up, certificates Dr. Ben Heijmen / Dr. Indranil Mallick / Dr. Pritanjali Singh
01:50 pm	Lunch and dispersal



## COURSE FEE

**EARLY BIRD registration extended till 31<sup>st</sup> October 2024**

	Indian Delegate	Foreign Delegate	PG
Physician (AROI Member)	INR 12000*	USD 250	
Physicist	INR 10000*	USD 250	
Radiotherapy Technologist	INR 8000*	USD 200	INR 10000*
Team (Physician & Physicist)	INR 18000*	USD 400	
Team (Physician & Physicist & Radiotherapy Technologist)	INR 25000*	USD 550	
<b>* Inclusive of 18% GST</b>			

**LATE REGISTRATION after 1<sup>st</sup> November 2024**

	Indian Delegate	Foreign Delegate	PG
Physician (AROI Member)	INR 14000*	USD 270	
Physicist	INR 12000*	USD 270	
Radiotherapy Technologist	INR 10000*	USD 220	
Team (Physician & Physicist)	INR 22000*	USD 420	
Team (Physician & Physicist & Radiotherapy Technologist)	INR 30000*	USD 570	
<b>* Inclusive of 18% GST</b>			



## HOTELS NEAR BY

Hotel Name	Rate	Distance from Venue	Contact Number
Hotel G Diamond	From 1500 Onwards	0.5 km (Click to view map)	
Hotel Royal Bihar	From 2500 Onwards	1.4 km (Click to view map)	Mr. Shad (+91 6299702440)
Hotel Patliputra Continental	From 5000 Onwards	7.8 km (Click to view map)	Mr. Shad (+91 6299702440)
Hotel Lemon Tree	From 7500 Onwards	20.2 km (Click to view map)	
The Red Velvet Hotel	From 3500 Onwards	9 km (Click to view map)	Mr. R K Ranjan (+91 7004672663)
Golden Crown	From 3000 Onwards	10 km (Click to view map)	
AVR Hotels & Banquets	From 3000 Onwards	10 km (Click to view map)	
Vatika Premier	From 5500 Onwards	10 km (Click to view map)	Mr. Rahul Mishra (+91 7765030303)



## REGISTRATION

The course is aimed for the Radiation Oncologists/Physicists/RTT, involved in advanced treatment planning in their daily routine. One Physicist, one Physician and one Technologist from as institution are encouraged for team participation.

Please visit the website for registration.

Website - [www.aroiestropatna.com](http://www.aroiestropatna.com)

The last date of the early bird registration extended till 31<sup>st</sup> October 2024.

As the number of available seats are limited, registration will be first come first serve basis.

Mailing Address - [aroiestropatna@gmail.com](mailto:aroiestropatna@gmail.com)

Contact Person

Dr. Pritanjali Siingh

Mob: 9334931395

Application for CME recognition submitted to the Bihar Medical Council



BODH GAYA



PATNA SAHIB  
GURUDWARA



NALANDA UNIVERSITY



RAJGIR GLASS BRIDGE



SCAN HERE  
TO REGISTER

Account Details:

Account Name: AROICON

Account Number: 579320110000317

IFSC Code: BKID0005793

Bank Name: Bank of India

Branch: Phulwari Sharif Branch

Event Partner



Ravindra Purohit

+91 79842 98960

[ravindra@mightyduo.com](mailto:ravindra@mightyduo.com)