



WELCOME TO THE

# ICPO ACADEMY FOR THERANOSTICS

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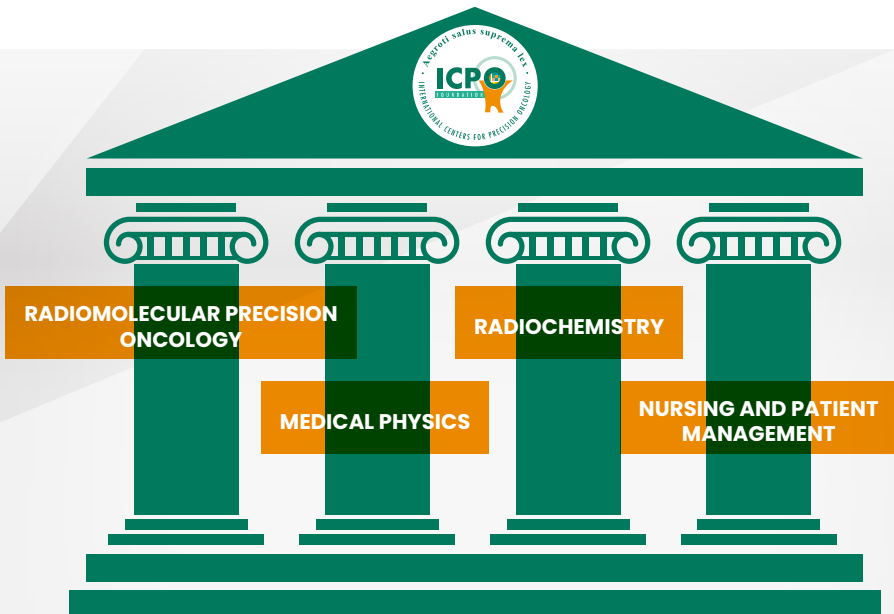


**R**adiomolecular Precision Oncology represents a paradigm shift in cancer care today, therefore **world-class standardized education of healthcare professionals** is key to ensure sustainable patient access at a global scale.

The ICPO Academy for Theranostics offers a **comprehensive online educational programme**, developed by the ICPO Foundation and powered by its global Community of experts. It features over 50 hours of content taught by over 30 leaders and experts. The content is available in different languages.

**The primary audiences** of the ICPO Academy for Theranostics are **clinicians, researchers, physicists and radiochemists as well as nurses and technologists**, who seek to **integrate Radiomolecular Precision Oncology in patient care**.

**The main objective** of the Academy programme is to disseminate knowledge in Radiomolecular Precision Oncology to improve outcome of a patient treated with radiopharmaceutical therapies.



# Leadership and Faculty

The curriculum by the ICPO Academy for Theranostics has been developed under the guidance of its President, Prof. Richard P. Baum, world leader and pioneer in Nuclear Medicine and Radiomolecular Precision Oncology, together with prominent Pillar Leaders, international experts in their respective field, namely Prof. Vikas Prasad, Prof. Thomas Beyer, Prof. Frank Rösch, Linda Gardner and Josh Mailman. Thanks to their extensive cumulated knowledge and experience as well as personal dedication, they have crafted an exclusive and comprehensive online educational programme that engages over 30 carefully selected Faculty to cover each of the teaching units.



Prof.  
**RICHARD P. BAUM**  
President of the Academy



Prof.  
**VIKAS PRASAD**  
Radiomolecular Precision Oncology



Prof.  
**THOMAS BEYER**  
Medical Physics



Prof.  
**FRANK RÖSCH**  
Radiochemistry



**LINDA GARDNER**  
Nursing and Patient  
Management



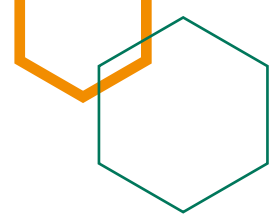
**JOSH MAILMAN**  
Nursing and Patient  
Management

## Curriculum

ICPO Academy participants have the opportunity to acquire fundamental knowledge and expertise in Radiomolecular Precision Oncology. Each Teaching Unit takes about 45 minutes to complete. Each Teaching Unit contains 3 teaching videos, each about 10 minutes long, and may offer additional teaching content such videos and links to external videos, animations, interviews and further readings.

After completing each Teaching Unit, the participant will take a multiple-choice test to assess whether the key learning points have been acquired. To successfully complete a teaching unit, 80% of the questions must be answered correctly. Furthermore, the teaching units offer additional and optional introductions of the lecturers, interludes in form of interviews and videos as well as links to external support material.

# Radiomolecular Precision Oncology Pillar



This pillar covers medical and scientific content targeting physicians and also complementing content of the other four pillars.

Firstly, the Neuroendocrine tumor teaching units allow to delve into the epidemiology and historical evolution of these tumours, explore their classification, and examine their pathological basis. The participant will then understand the clinical presentation and role of molecular imaging techniques such as PET/CT, as well as to learn about treatment response evaluation to peptide receptor radionuclide therapy (PRRT) using SPECT/CT and the significance of biomarkers.

Secondly, in the prostate cancer teaching units, the participant will explore the epidemiology and historical evolution of the disease, examine its tumour classification, and focus on pathology and genomics. This will allow to gain insights into molecular imaging techniques, with a specific focus on PSMA PET/CT, including potential pitfalls, as well as to understand treatment response evaluation to PRRT using SPECT/CT and the significance of PSA as a tumour marker. Systemic therapy guidelines and basic principles of PRRT will be covered for both cancer types above.

Finally, radioiodine therapy and its application in thyroid cancer will be introduced.

## NEUROENDOCRINE TUMOURS

Name of Teaching Unit	Lecturer	Name of Teaching Unit	Lecturer
Epidemiology and historical evolution, and tumor classification	Nicola Fazio	Treatment response evaluation to PRLT with SPECT/CT in Neuroendocrine Tumors	Heying Duan
Pathological bases of Neuroendocrine Neoplasms	Massimo Milione	Biomarkers (CgA, NETest / PPQ)	Andrea Frilling
Clinical Presentation	Christos Toumpanakis	Systemic Therapy for GEP-NETs – Guidelines and Recommendations	Angela Lamarca
Molecular Imaging – SSTR PET/CT	Vikas Prasad	Basic Principles of PRRT	Vikas Prasad
Metabolic Imaging – FDG PET	Valentina Ambrosini		

## PROSTATE CANCER

Epidemiology and historical evolution, and tumor classification	Lucas Kastner	Treatment Response Evaluation to PRLT with SPECT/CT in Prostate Cancer	Hong Song
Pathology and Genomics	Francesca Khani	PSA as Tumor Marker	Daniel Childs
Clinical Presentation	Jacob Orme	Systemic therapy for Prostate Cancer – Treatment guidelines and recommendations	Oliver Sartor
Molecular Imaging – PSMA PET/CT	Ashwin Singh Parihar	Basic Principles of PRLT	Robert Seifert
Pitfalls in PSMA PET Imaging	Matthias Eiber		

## OTHER TUMOR ENTITIES

Radioiodine Therapy (Thyroid cancer, introduction)	Vikas Prasad		
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# Medical Physics Pillar

This pillar explores diverse topics in medical imaging, radiomolecular/nuclear medicine and Theranostics targeting an audience of physicists thereby complementing the content of other pillars. Participants may expect to understand SPECT/CT and PET/CT imaging principles, radiobiology and radiotherapy fundamentals, as well as learn about essential topics such as activity measurements, quality control, radiation safety, patient dosimetry and clinical dosimetry and discover strategies to address imaging artifacts and optimize protocols. In summary, participants will appreciate the crucial role of medical physicists in Radiomolecular Precision Oncology.

Name of Teaching Unit	Lecturer	Name of Teaching Unit	Lecturer
Medical imaging, Nuclear medicine and theranostics – A primer	Elif Hindie	Quantitative Imaging for Dosimetry: SPECT	Kathy Willowson
Radioisotopes and Transformation	Frank Rösch	Quantitative Imaging for Dosimetry: PET	Dale Bailey
SPECT(/CT) Imaging – Basics	John Dickson	Clinical Dosimetry (Dx and Th) – Part 1	Manuel Bardiès
PET(/CT) Imaging – Basics	Thomas Beyer	Clinical Dosimetry (Dx and Th) – Part 2	Manuel Bardiès
Radiobiology	Yaser Gholami	Imaging Artifacts and Optimized Protocols 1	Bernhard Sattler
Radiotherapy – Basics	Andreas Renner Nicole Nesvacil Petra Tmkova	Imaging Artifacts and Optimized Protocols 2	Bernhard Sattler
Activity Measurements	Ana Denis-Bacelar	PACS, Data Handling 1	Markus Diemling
Quality Control	Ivo Rausch, PhD	Clinical Routine and Ethics	Harun Ilhan
Radiation Safety	Søren Holm	Inter-Domain Communication in Clinical Routine	Roy Sheppard
Basic Patient Dosimetry	Ana Denis-Bacelar	The Medical Physicists	



# Radiochemistry Pillar

Addressing chemists and being a great complement to other pillars, this pillar is a strong primer on radiochemistry and nuclear chemistry, exploring the composition of atomic nuclei as a mixture of nucleons, as well as the structure and characteristics of stable and unstable atomic nuclei. Participants will understand the rationale of unstable atom nuclei and the philosophy of nuclear transformation pathways and kinetics. This pillar gives an opportunity to delve into the various emissions specific to individual transformation pathways, in particular relevant to Theranostics. Participants will finally become familiar with radionuclide production processes at nuclear reactors, cyclotrons and generators.

Name of Teaching Unit	Lecturer	Name of Teaching Unit	Lecturer
Radiochemistry / Nuclear Chemistry – A Primer	Frank Rösch	The Rational of Alpha Transformation	Frank Rösch
The Stable Atomic Nucleus	Frank Rösch	Secondary Transformations	Frank Rösch
The Atomic Nucleus: a Mixture of Nucleons	Frank Rösch	Post-effects & the Origin of 511 keV Annihilation Photons	Frank Rösch
The Atomic Nucleus – Nucleon Shells	Frank Rösch	The Emissions Relevant to Theranostics	Frank Rösch / Ivo Rausch, PhD
The Rational of Transformation	Frank Rösch	Radionuclide Production – A Primer	Frank Rösch
Transformation Kinetics	Frank Rösch	Radionuclide Production Mechanisms	Frank Rösch
The Rational of Beta Minus Transformation	Frank Rösch	Radionuclide Production at Nuclear Reactors	Frank Rösch
Beta Plus Transformation & Elementary Particles	Frank Rösch	Radionuclide Production at Cyclotrons	Frank Rösch
Excited Nuclear States	Frank Rösch	Radionuclide Production via Radionuclide Generators	Frank Rösch

# Nursing and Patient Management Pillar

This pillar offers nurses and in general clinicians interacting with patients to acquire basic knowledge and essential skills to effectively support patients in Radiomolecular Precision Oncology. Indeed, nursing plays a crucial role in patient care, thus learning effective patient communication strategies to address their decisions, answer their questions and meet their needs is a major component of the Academy for Theranostics. Moreover, this pillar content explores various therapy video samples to enhance the understanding of procedures and protocols.

Name of Teaching Unit	Lecturer	Name of Teaching Unit	Lecturer
Nursing – Basic Knowledge	Linda Gardner	Patient Communication – Patient Decisions, Questions and Communication	Josh Mailman
Therapy Information – Therapy Video Samples	Linda Gardner		

# Application



At the Academy for Theranostics, we believe in widened accessibility to education as well as its scalability worldwide. While there are no specific prerequisites, our content is particularly tailored to provide fundamental knowledge and learning experiences to healthcare professionals specializing in radiomolecular/nuclear medicine and oncology related specialties as well as medical students.

There are **two options to apply** depending on whether **(1)** you are willing to **cover the costs for yourself, or (2)** you are an **academic looking for a stipend sponsored by a third-party organization** active in a given country, in this case ICPO will facilitate your application process.

## Option 1: Application to Sponsored Stipend

Prospective applicants for a sponsored stipend are required to provide the following documents, which are essential for **ICPO to identify a suitable sponsor for your stipend, ensuring that the support aligns with your individual needs and objectives.**

Up-to-date Resume	Motivation Letter	Detailed Educational and Career Plan
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## Option 2: Self-Payment

As part of the registration process, please ensure to provide an up-to-date resume. **The registration fee is 1,500.00 EUR per participant, inclusive of one certificate.** VAT of 19% may be applicable subject to your country and would be added to this amount.

# Certification and Endorsement



An **international certification issued by the ICPO Foundation** validates the educational achievements of the participant for a given Pillar. It is signed by **Professor Richard P. Baum**, President of the Academy, **as well as the respective Pillar Leader.**

To enhance the international recognition and value of the ICPO Academy certificate, and to provide successful participants with broad acknowledgment of their competence and expertise, the ICPO Academy for Theranostics has received accreditation from UEMS-EACCME. This accreditation, specifically for nuclear medicine physicians, ensures mutual recognition with the American Medical Association, further affirming the Academy's commitment to excellence in Continuing Medical Education (CME). Also, multiple **endorsements** are in the works and **further content is being developed in a co-certification collaboration.** All the above are **with prestigious societies and institutions** in the field of radiomolecular/nuclear medicine globally.

For the latest update, please check the Academy website at **[www.theranostics.academy](http://www.theranostics.academy)**

# Please register at [www.theranostics.academy](http://www.theranostics.academy)



## RADIOMOLECULAR PRECISION ONCOLOGY

FOR PATIENTS WORLDWIDE

THE ICPO FOUNDATION.

For further information, please contact [academy@icpo.foundation](mailto:academy@icpo.foundation)

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Mutually recognized by:



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de Sociedades de Biología y  
Medicina Nuclear



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Nuclear Medicine



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Radiopharmaceutical and  
Molecular Therapy



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