



ICTP, Trieste University, Italian and Croatia Medical Physics : A Training Opportunity for Young Physicists from Developing Countries

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Connecting
Medical Physicists
in Europe and Beyond

The Congress has been accredited by ERMPP
as a CTP event for Medical Physics
55 CTP credit-points

1st EUROPEAN
CONGRESS OF
MEDICAL
PHYSICS

September 1-4, 2016
Eugenides Foundation, Athens-Greece



The Abdus Salam ICTP

- The Abdus-Salam ICTP is an international organization, belonging to the United Nations system (through UNESCO and IAEA)
- Founded in 1964 by the initiative of the Nobel laureate Abdus Salam





Master of Advanced studies in Medical Physics

- Started in 2014
- A two-years programme of ICTP in cooperation with the Trieste University
 - First year: lectures and practical in Trieste
 - Second year: residency in an hospital of the Network of hospitals
- External advisory committee: IOMP, IAEA
- Financially supported by ICTP, IAEA, TWAS, KFAS, IOMP, EFOMP





The first year:

The syllabus, following IAEA and AFRA Guidelines, has been adapted to be developed in a year.

Academic courses with oral and/or written exam:

- Anatomy and physiology - Radiation physics - Radiation dosimetry - Radiobiology - Medical statistics
- Physics of nuclear medicine - Imaging fundamentals - Physics of diagnostic radiology (X rays, US, MRI, Hybrid systems) - Physics of radiation oncology - Radiation protection – Information Technology - Monte Carlo techniques

330 LESSONS AND 230 GUIDED EXERCISES



Master of Advanced Studies in Medical Physics

The second year:
full-time clinical training

Two programmes:

- Radiation oncology
- Diagnostic imaging

Module : Radiation Oncology	Duration (weeks)	Range
Clinical environment in radiotherapy	Entire programme 46 weeks	
External beam radiotherapy (EBRT) reference dosimetry	4	2-6
EBRT relative dosimetry	7	4-10
Imaging equipment	3	2-4
EBRT	17	14-20
Brachytherapy	2.5	1-4
Radiation protection and safety	3	2-4
Equipment specification and acquisition	1.5	1-2
Quality management	8	6-10
Professional ethics	Entire programme 46 weeks	
Total weeks	46	

Module: Nuclear medicine	Duration (weeks)	Priorities
Clinical awareness	Entire programme 23 wks	
Radiation protection and safety	3	
Dosimetry instrumentation and calibration	1	
Performance testing of imaging equipment	13	1
Patient dose audit	2	4
Technology management of imaging equipment	1	2
Optimisation of clinical procedure	3	3
Professional ethics	Entire programme 23 wks	
Total weeks	23	

Module : X-ray/MR Imaging	Duration (weeks)	Priorities
Clinical awareness	Entire programme 23 wks	
Radiation protection and safety	4	4: design of the NM Dpt
Technology management in NM	2	
Radioactivity measurement and internal dosimetry	3	
Performance testing of NNM equipment	7	1
Preparation and quality control of radiopharmaceuticals	1	
Radionuclide therapy using unsealed sources	2	3
Optimisation in clinical application	4	2
Professional ethics	Entire programme 23 wks	
Total weeks	23	





The Faculty:

Almost 30 teachers from:

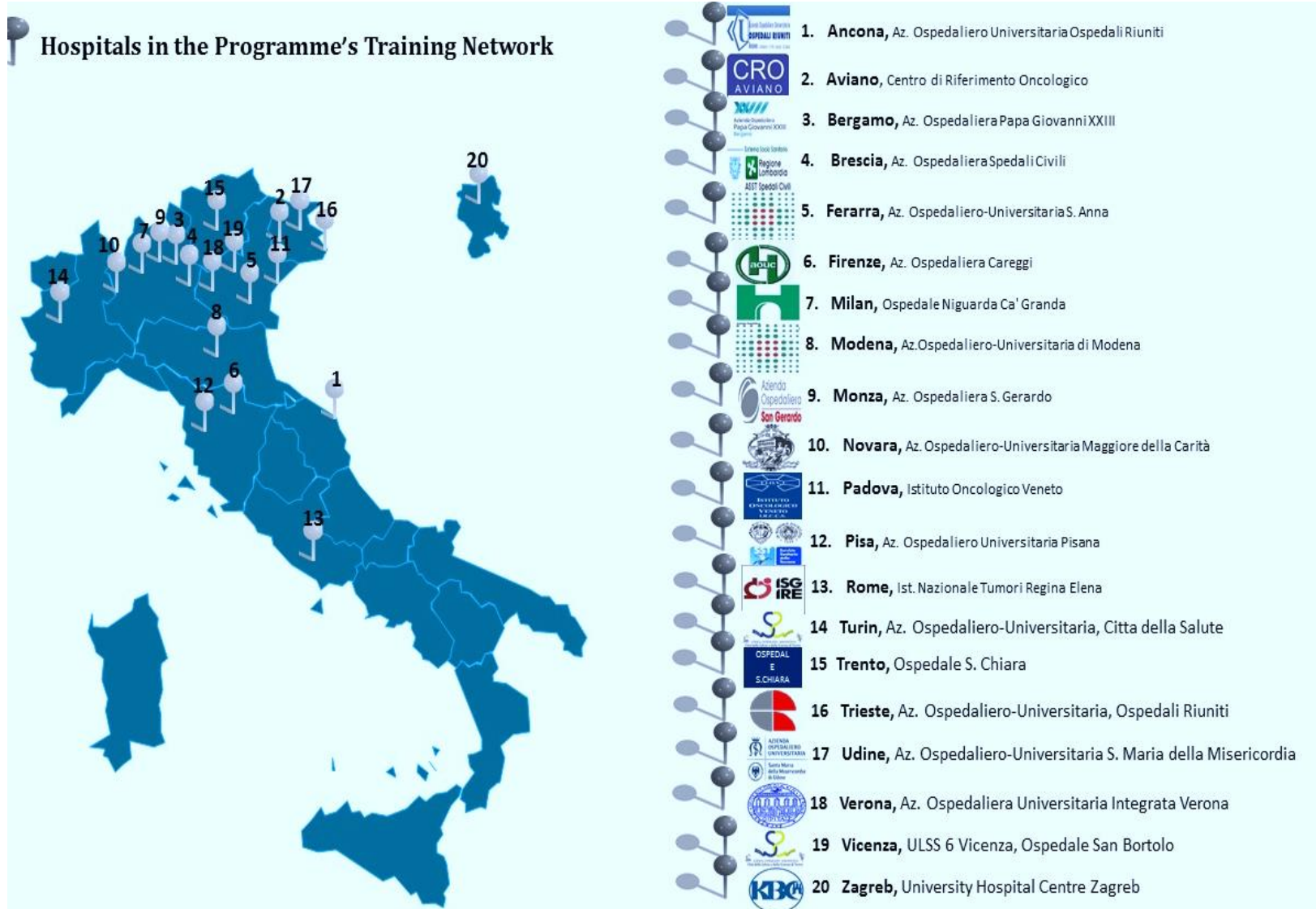
- Trieste, Bologna, Surrey (UK) Universities
- IAEA
- Medical Physics Dpt.s of 7 large teaching hospitals in Italy and Croatia
- and, ICTP

- And, almost 15 Clinical Medical Physicists acting as Supervisors for the clinical training

In the next slide the list of Hospitals of the Network for the Clinical training 6



Master of Advanced Studies in Medical Physics



The students of the first 3 cycles

	Countries	Students
Africa	12	17
Asia	8	11
Europe	3	4
Latin America	7	15
Total	30	47

- 200-300 applications from all regions every year
- Now the student's selection process for the 4th cycle (2017-2018) is ongoing

	COUNTRY	FIRST CYCLE	SECOND CYCLE	THIRD CYCLE	TOTAL
1	ECUADOR	1	1	1	3
2	GHANA	1		1	2
3	GUATEMALA	1	1	1	3
4	IRAN	1			1
5	MADAGASCAR	1		1	2
6	MONTENEGRO	1			1
7	MOROCCO	2	1	1	4
8	NIGERIA	1			1
9	QATAR	2			2
10	TOGO	1			1
11	VIETNAM	1			1
12	ETHIOPIA		1	1	2
13	MAURITIUS		1		1
14	NEPAL		1	1	2
15	NICARAGUA		2	1	3
16	PALESTINE		2		2
17	SUDAN		2		2
18	UKRAINE		1	1	2
19	ARGENTINA			1	1
20	BANGLADESH			1	1
21	COSTARICA			1	1
21	EGYPT			1	1
23	EL SALVADOR			1	1
24	ESTONIA			1	1
25	HONDURAS			1	1
26	JORDAN			1	1
27	KENYA			1	1
28	PERU			1	1
29	SENEGAL			1	1
30	ZIMBABWE			1	1
		13	13	21	47





The Abdus Salam
International Centre
for Theoretical Physics
50th Anniversary 1964 - 2014



Thank you!

For more
information
visit:

www.ictp.it

There is a **GENIUS** in all of us!