



# Work Package 4: Training

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MEDICIS-PROMED – Kickoff Meeting  
CERN

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# WP4: objectives

## ETN

- Objectives
  - WP4 deals with the *training* aspects of the ETN
  - from...
    - monitoring the Personal Career Development Plans of individual ESRs...
    - to the invitation of visiting scientists to...
    - the definition of the Network-wide and complementary training courses
  - administration of the ECTS training credits for the recruited ESRs



# WP4: who & how?

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- Who?
  - CERN training department and Oxford University Consulting will participate in the Training Office and make detail plans of the training program
  - the Training Office will monitor and follow, and report to the Management Board
- How?
  - graduate and post-graduate courses at universities
  - organization of schools and workshops
  - monitoring schools and conferences from outside the Network and advertising them within the Network
  - distance and web-based training
  - complementary training
  - in collaboration with CERN Learning & Development Group

# Contributions by partners

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Name	Supervision	Secondment	Award PhD	Visit scientist	Network-wide training	Complementary skills
CERN	X	X		X	X	X
Graphene inst.	X		X	X	X	X
JOGU	X	X	X		X	
AAA	X	X		X		
C2TN	X	X	X		X	
CNAO	X	X				
PAX	X	X				
KUL	X	X	X	X	X	X
CHUV	X	X	X	X	X	
HUG	X	X	X		X	
EPFL-ISREC	X	X	X		X	X
Medauston	X	X				
Oxford Consulting					X	X
ARRONAX	X	X				
ILL	X	X		X		

# Scientific training actions

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Training	Knowledge gained	Institution	WP
Mass separators	isotope mass separation isotope production targets and ion sources Hands-on training	Isolde, CERN	1,2
Materials and radiation	2D materials Graphene Material performance and degradation	Materials for demanding environments New CDT school/ Univ. Manchester	1,2
Fluka Monte-Carlo Code	Multiple particle tracking code Radiation protection Hadron therapy treatment planning Shielding and operational safety	INFN, CERN	1,2,3
Radiobiology	Biological radiation dose-response curve DNA damage and repair	Univ. Pavia, CNAO	2,3
High power Lasers	Laser spectroscopy Atomic transitions Laser ionization	JOGU	1,3
Sf intermetallic phase diagram	Inorganic synthesis of intermetallic alloys Handling of actinide materials Characterization techniques	C2TN-IST	1
Molecular oncology	Molecular biology of normal and cancer cells Hallmarks of cancer Development of anti-cancer drugs	EPFL-ISREC	2, 3
Radiopharmaceuticals synthesis	Solid phase peptide synthesis principles Chelators for radiometals Automated modules	C2TN-IST	2,3
Radioisotope production	Production cross-sections Energy deposition Isotope separation and target reprocessing	ARRONAX	1,2
Nuclear spectroscopy	Properties of exotic nuclei Optical techniques Combining atomic traps and lasers	KUL	1,2,3
Ionization in plasma	Classification of plasmas Atomic phenomena Experimental characterization	EPFL	1
Robotics and automation	Process definition Programed vs remote controlled Practical cases	EPFL	1,2,3
CERN Accelerator School	Basic physics of accelerators Accelerator components Practical cases	CERN	1,2,3
Nuclear engineering	Basics of materials for nuclear environments Radiation damage Heat power dissipation	Univ. Manchester	1,2
Functional imaging	Principle of PET-SPECT imaging Image treatment softwares	HUG/CHUV	2,3

# Transferable skills training

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Network-wide transferable skills Training	Goal	Days
Effective communication-Presentation skills(follow-up from kick-off), Chairing and participating in meetings, Rapid Reading, Managing time and stress, Working effectively in team, Report writing, Proposal writing, Job application, Career development in science and technology, Speaking to the public/media, Ethical issues and(inter)national legislation	Improve collaboration skills Improve communication skill Learn about multi-tasking, time management and crisis management Improve efficiency	15
Language courses (English and/or the language of the host country)	Better language proficiency to maximise communication possibilities Improve employment chances	2hours/ week
Project management (PMI)	Learn about effective management of R&D projects including scheduling, budgeting	3
Scientific writing skills	Be effective in scientific written communication, requests, lectures. Learn to develop critical thinking skills Learn about development of analytical and argumentation skills	1
New Product Development (NPD)	Strategic thinking Learn about various stages and subprocesses of NPD which integrates, R&D, marketing and financing Market survey strategies Learn about pricing methods	1
Marketing entry strategies	How to approach the market Learn about existing tools and methods	1
Acquiring private and public funding	Learn about research proposal writing and evaluation National funding organizations functioning Start-up national programs	1
Establishing an enterprise	Learn from gained partners experience Learn about national differences	2
Intellectual Property and KT aspects	Evaluate patentability Strategy based on innovation Patent application process Licensing	2
Entrepreneurship	Market need evaluation Start-up company life cycle Successful vs unsuccessful	3
Creativity and Idea generation	Methods to promote idea generation Individual vs collective processes Idea selection	1

# Deliverables

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## List of deliverables

Deliverable Number <sup>14</sup>	Deliverable Title	Lead beneficiary	Type <sup>15</sup>	Dissemination level <sup>16</sup>	Due Date (in months) <sup>17</sup>
D4.1	Enrolment in PhD program	1 - CERN	Other	Public	18
D4.2	Open training event (summer school)	1 - CERN	Other	Public	37

## Description of deliverables

D4.1 Enrolment in PhD program - M18 D4.2 Open training events (summer school) - M25-26, M37-38

D4.1 : Enrolment in PhD program [18]

Enrolment of the ESRs in PhD programs

D4.2 : Open training event (summer school) [37]

Open training events (summer schools) in months 25 & 37 with the possibility of additional schools if deemed necessary.

# Milestones

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## Schedule of relevant Milestones

Milestone number <sup>18</sup>	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS16	Personalized training plan per ESR	1 - CERN	12	Each beneficiary will draw up the necessary training plan for their respective recruited researchers.
MS17	Obtaining credits to submit thesis	1 - CERN	48	





# WP4: action to be taken

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- Composition of the Training Office
  - To be decided in the *Constitution and responsibilities of Medicis-Promed management bodies* point after the coffee break