CURRICULUM VITAE

Personal data

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Professional profile

Radiation protection against ionizing radiations and health and safety at work:

- Radiation Protection Expert (3rd decree, maximum level according to the Italian law and the European directive), radiation protection of workers and of the population against ionizing radiation, i.e. using x-rays, radioactive material, natural radioactivity, NORM, etc.;
- Medical Physics Expert: radiation protection of patients in radiation medical practices;
- Health and safety at work;
- Laser safety expert, according to IEC and international guidelines about laser safety.

Studies

Graduated in Physics at the University of Pavia, Italy (1978) Graduated in Medical Physics at the University of Milan, Milan (1991).

Actual positions

- Since 15 August 2019, Professor Honorario of the Instituto Universitario del Hospital Italiano de Buenos Aires, Argentina
- Since 1st October 2019, contract professor of "Introduction to radiation protection", at the University of Pavia, Dept. of Physics, Italy
- Since 1999, INFN research association, Istituto Nazionale di Fisica Nucleare, Section of Pavia, Italy.

Professional experience and skills

2002 – 30th September 2019, researcher at the University of Pavia, giving the following courses:

- Radiation protection (Master degree in Physics, dept. of Physics);
- Physical risks at work (postgraduate school of Hygiene, Faculty of Medicine)
- Radiation protection and safety at work (Master of II level in Clinical Engineer)
- Previous didactic activities (main):
- Medical physics and radiation protection (degree in Nurse, Fac. of Medicine, >10 years);
- Radiation protection (International Master of II level in Nuclear technologies of ionizing radiations, sponsored by IAEA, >10 years).

Member of the team set up by the Italian Minister of Universities for drawing up the national law about health and safety at work devoted to the Italian Universities and research institutions (1996-1998).

Manager of the HSE (Health, Safety and Environmental) and of the Radiation Protection Service of the University of Pavia (1991 – 2002). Performing his tasks, he has gotten also the following skills: laser and ultraviolet risk assessment and protection.

RESPONSIBLE FOR THE HEALTH AND SAFETY AT WORK Services Responsible of the HSE Service of a lot of institutions such as: CNAO Foundation: National Centre of Hadron Therapy in Pavia (2006–2010); INGM Foundation: National

Institute of Molecular Genetics in Milan (2007-2010) and also at private companies, hospitals and medical divisions (some are listed below).

RADIATION PROTECTION EXPERT

In charge as Radiation Protection Expert of many institutions and private companies such as: University of Pavia (1991-2003, radiobiological and research facilities); Nuclear research reactor of the University of Pavia (LENA, Triga Mark reactor, 1999–2001 and as replacement 2005-209); CNAO: National Centre of Hadron Therapy Foundation in Pavia (2007–2010, proton and carbon ion therapy beams up to 400 MeV/u); INFN: National Institute of Nuclear Physics in Pavia (since 2002, nuclear physic research activities); Saipem SpA – industrial radiography in oil companies- (since 2012); Regional Regional Health Agency managing many hospitals (i.e. ASL of Melegnano, Mi, 1999 – 2006, health and medical activities); National Institute of Molecular Genetics in Milan (INGM, since 2014).

MEDICAL PHYSICS EXPERT

In charge as medical Physics expert of many institutions, such as: University of Pavia (1991-2003); Regional Health Agency (managing many hospitals, ASL of Melegnano, Mi, 1999 – 2006, health and medical activities).

LASER SAFETY EXPERT (TECNICO SICUREZZA LASER, TSL)

In charge as laser safety expert of many institutions, such as University of Pavia (1996 - 2003). Actual charges as TSL:

- BT Italia SpA, Milano (since 2018),
- AMADA Italia SrL, Pontenure (since 2019).

Specific experiences about ionizing radiation protection and physical risky agents at work of the following areas/plants:

- Nuclear research reactor (TRIGA Mark);
- Research laboratories in physics, biology, geology, chemistry, pharmacy, radiochemistry;
- Medical practices: radiodiagnostic and radiotherapy;
- Radon indoor and NORM (Natural Occurring Radioactive Material);
- Environmental radiological monitoring (sites next to the Caspian sea, 2003-2006).
- Industrial radiography (Non Destructive Testing) at fabrication yards located in: Angola, Nigeria, Congo, Saudi Arabia, Indonesia, Kazakhstan, Iraq, Brazil and Italy (since 2010)
 performing audits and training about radiation protection in each yard;
- Collaboration with companies and/or institutions involved in safety at work practices and audits, like: TECO srl, HSE GAS srl, ITP SpA, INFN; INGM and CNAO.

Have been involved in several researches, among which:

- Radiation dosimetry with electronic paramagnetic resonance of TLD dosimeters (1984);
- Radiation protection of patients: radiological risk assessment for patients undergoing cystourethrography examination (1991-1992);
- Radiation protection in neutron scanning of containers (2007–2011);
- Natural radioactivity influence on the ARGO cosmic ray detector (Italian Chinese scientific collaboration in Tibet, 2007-2014);
- Analysis about radon time variations (since 2003).

Been responsible of the earthquake prediction research based on soil radon gas variations as seismic precursor (published after the earthquake occurred in Ecuador in 1986) and scientific collaboration in Tibet (since 2014).

IAEA collaboration

Collaboration with IAEA (International Atomic Energy Agency, UN Agency in Vienna):

- radiation protection in industrial radiography (WGIR: Working Group on Industrial Radiography, 2011-2013);
- Member of the Agency's Team set up for assessing the IAEA radiation protection policy and related activities (2012–2013).

International Cooperation

1984 - 1990: working in South America (Ecuador and Bolivia), involved in the international cooperation with COOPI (Cooperazione Internazionale, Italian non-governmental organization) in Ecuador and Bolivia.

<u>Ecuador</u>, working at the Polytechnic of Chimborazo (ESPOCH: Escuela Superior Politécnica de Chimborazo, Riobamba, Ecuador, 1985-1988); his job description involved:

- Professor of Physics and of Radiation protection at the Faculty of Science;
- Set up of the "Laboratorio de técnicas nucleares";
- Collaboration with the National Regulatory Board (CEEA: Comisión Ecuatoriana de Energía Atómica, Quito);
- Manager the investigation on the earthquake prediction (see also researches). Bolivia,
 - as Manager of Cooperazione Internazionale (1989-1991), responsible for several cooperation projects supported both by the Italian Government and by International Institutions (Red Cross, UNDP, ect).

El Salvador,

- collaboration teaching about radiation protection in industrial and medical areasat the University of Don Bosco, according to the agreement signed by the University of Pavia and the Don Bosco University (San Salvador, since 2016).
- Collaboration with ISSS Hospitals in San Salvador performing training about radiation protection in interventional radiology (2023).

<u>Palestine</u>,

- Erasmus programs lectures about radiation protection in medical areas at the An Naja National University (Nablus, 2017)
- University of Bethlehem (Bethlehem, 2018).

Ecuador, since october 2018

- scientific collaboration with the Escuela Politecnica de Chimborazo, Fac. Ciencias;
- AUDIT about protection against ionizing radiation during medical practices (radiotherapy, imaging, interventional radiology, F-18 production and nuclear medicine), at the Hospital de Especialidades Carlos Andrade Marin, Quito.

<u>Albany</u>,

• Erasmus programs – lectures about radiation protection in medical areas at the University of Tirana (Tirana, 2019).

<u>Argentine</u>,

• Erasmus programs – lectures about radiation protection in medical areas at the Instituto Universitario del Hospital Italiano de Buenos Aires (Buenos Aires, 2019).

<u>Uganda,</u>

• Training about radiation protection in medicine for the International Specialised Hospital of Uganda, ISHU (2023).

Languages

Italian: native tongue; Spanish: fluent; English: quite good.

Pavia, 2023 July 25th

Elio GIROLETTI (digital signe)