Europass Curriculum Vitae

Personal information

Surname(s) / First name(s)	**Pinto, Massimo**
Telephone(s)	+39 06 3048 4662 Mobile: +39 329 8383 529
Email(s)	massimo.pinto@enea.it massimo.pinto@me.com
Nationality(-ies)	Italian
Date of birth	July 9, 1973
Gender	Male

Current Position

Since 2010	Research Scientist, Dosimetry Division, Italian National Institute of Ionizing Radiation Metrology

Research Interests

Since 2010	Experimental and computational dosimetry of ionizing radiation, using free-air chambers, cavity chambers, graphite calorimeters, Monte Carlo codes of radiation transport PENELOPE and EGSnrc, the automation of laboratory instruments control using Visual C++ based programs, and automation of data analysis using Python in or outside of Jupyter notebooks.
Before 2010	DNA damage and repair in human cultured cells using pulsed-field gel-electrophoresis, bystander effects and adaptive responses using micronuclei and survival assays, flow cytometry and cell sorting, immunofluorescence.

Post-Doctoral Research Experience

2006–2010	Ionising Radiation and Biophysics and Biomedical Physics Unit, Istituto Superiore di Sanità, Rome, Italy. Project: "Background low dose rate ionizing radiation and its potential adaptive behaviour in the human lymphoblastoid line TK6". Funded by Museo Storico della Fisica e Centro Studi e Ricerche Enrico Fermi. Principal Investigators: *Luigi Satta* and *Mauro Belli*
2003–2006	Radiation Research Division, UMDNJ, New Jersey Medical School, NJ, USA. Project: "Radiation-induced bystander effects and their adaptive behaviour in three dimensional in vitro human culture models labelled with radiopharmaceuticals". Principal Investigator: *Roger W. Howell*

2002–2003 Biophysics Department, Faculty of Sciences, University of Naples Federico II, Naples, Italy. Project: "Murine cell survival after exposure to accelerated Lithium ions". Principal Investigator: *Giancarlo Gialanella*

Education

1998 – 2002 Ph.D. Cell and Molecular Biophysics, Gray Cancer Institute and Oncology Department, University College London, UK. Ph.D. in radiation-induced DNA damage and repair. Advisers: *Kevin M. Prise* (GCI), *Barry D. Michael* (GCI), and *John Hartley* (UCL). Thesis title: "Induction and rejoining of DNA double strand breaks in human cells after exposure to ionising radiation: an experimental and modelling approach"

1992 – 1998 B.Sc. Faculty of Sciences, University of Naples Federico II, Naples, Italy. BSc in Physics, perfect score cum laude. Thesis Advisors: *Gianfranco Grossi* (Naples, Italy) and *Kevin Prise* (Gray Cancer Institute, UK). Thesis title: "Molecular alterations induced by sparsely ionising radiations: experimental and theoretical studies"

Languages

Mother tongue(s) **Italian**

Self-assessment *European level*(⋆)	**Understanding**		**Speaking**		**Writing**
	Listening	Reading	Spoken interaction	Spoken production	
English	C2 Proficient user	C2 Proficient user	C2 Proficient user	C2 Proficient user	C2 Proficient user
French	A2 Basic user	B1 Independent user	A2 Basic user	A2 Basic user	A2 Basic user

(⋆) *Common European Framework of Reference (CEF) level*

International expert missions

2017 National Institute of Standards, Cairo, Egypt, Training on CMC procedures related to ACAA priorities and peer-review of draft CMCs, Project: "Building the Capacity of the Egyptian National Institute of Standards (NIS) in the Field of Metrology", February 26th - March 2nd

2016 National Metrology Institue of Ethiopia (NMIE), Addis Ababa, Ethiopia, Assessment of the current measurement capabilities of the NMIE SSDL in the field of radiation dosimetry, Project: "Enhancing the National Quality Infrastructure in Metrology and Radiation Safety", November 28th - December 2nd

National Institute of Standards, Cairo, Egypt, Feasibility Studies on calibration activities and training on calibration issues, Project: "Building the Capacity of the Egyptian National Institute of Standards (NIS) in the Field of Metrology", 16-20 October

Major scientific publications in peer-reviewed journals: Radiation Dosimetry

2019 Pimpinella M, Silvi L and **Pinto M**, 2019, "Calculation of kQ factors for Farmer-type ionization chambers following the recent recommendations on new key dosimetry data", Physica Medica **57** 221–30

2018 **Pinto M**, Andersen C E, Delaunay F, de Prez L A, Donois M, Duane S, Gomà C, Kosunen A, Ojala J, Pimpinella M, Rapp B, Siiskonen T, Sommier L, Teles P, Tikkanen J and Zink K, 2018, "The RTNORM contribution to the update of the kQ,Q0 factors for the International Dosimetry Code of Practice TRS 398", 115th Scientific Meeting of the JSMP vol **38**, pp 41—4

Testa A, Ballarini F, Giesen U, Gil O M, Carante M P, Tello J, Langner F, Rabus H, Palma V, **Pinto M** and Patrono C, 2018, "Analysis of Radiation-Induced Chromosomal Aberrations on a Cell-by-Cell Basis after Alpha-Particle Microbeam Irradiation: Experimental Data and Simulations", Radiat Res **189**(6)

2017 D'Arienzo M., **Pinto, M.**, Sandri, S. and Zagarella, R., 2017, "Radiological and Nuclear Events: Challenges, Countermeasures and Future Perspectives, in: Cyber and Chemical, Biological, Radiological, Nuclear, Explosives Challenges", edited by Martellini, M. and Malizia, A., Springer, 129–154

2016 L. Büermann, A.S. Guerra, M. Pimpinella, **M. Pinto**, J.A. de Pooter, L. de Prez, B. Jansen, M. Denoziere, and B. Rapp, 2016, "First international comparison of primary absorbed dose to water standards in the medium-energy X-ray range". Metrologia **53** 1A.

M. Pinto, M. Pimpinella, M. Quini, M. D'Arienzo, I. Astefanoaei, S. Loreti, A.S. Guerra, 2016, "A graphite calorimeter for absolute measurements of absorbed dose to water: application in medium-energy x-ray filtered beams", Physics in Medicine and Biology **61**(4)

2015 C. Kessler, **M. Pinto**, G. Cappadozzi, C. Silvestri, M. Bovi, and M.P. Toni, 2015, "Key comparison BIPM.RI(I)-K1 of the air-kerma standards of the ENEA-INMRI, Italy and the BIPM in ^{60}Co gamma radiation", Metrologia **52** (1A)

C Kessler, D T Burns, P Roger, M P Toni, **M Pinto**, M Bovi, G Cappadozzi, and C Silvestri, 2015, "Key comparison BIPM.RI(I)-K7 of the air-kerma standards of the ENEA-INMRI, Italy and the BIPM in mammography x-rays", Metrologia **52** (1A)

J Farah, A Trianni, O Ciraj-Bjelac, I Clairand, C De Angelis, S Delle Canne, L Hadid, C Huet, H Jarvinen, A Negri, L Novák, **M Pinto**, T Siiskonen, M J Waryn, and Ž Knežević, 2015, "Characterization of XR-RV3 GafChromic® films in standard laboratory and in clinical conditions and means to evaluate uncertainties and reduce errors", Medical Physics **42**(7)

C Patrono, O Monteiro Gil, U Giesen, F Langner, **M Pinto**, H Rabus and A Testa, 2015 "'BioQuaRT' project: design of a novel in situ protocol for the simultaneous visualisation of chromosomal aberrations and micronuclei after irradiation at microbeam facilities", Radiation Protection Dosimetry **166** (1-4)

2014 D T Burns, C Kessler, **M Pinto**, G Cappadozzi, C Silvestri, and M P Toni, 2014, "Key comparison BIPM.RI(I)-K3 of the air-kerma standards of the ENEA, Italy and the BIPM in medium-energy x-rays", Metrologia **51** Tech Suppl 06020

H Palmans, H Rabus, A L Belchior, M U Bug, S Galer, U Giesen, G Gonon, G Gruel, G Hilgers, D Moro, H Nettelbeck, **M Pinto**, A Pola, S Pszona, G Schettino, P H G Sharpe, P Teles, C Villagrasa, and J J Wilkens, 2014, "Future development of biologically relevant dosimetry", The British Journal of Radiology **88**(1045)

2012 M P Toni, M Pimpinella, **M Pinto**, M Quini, G Cappadozzi, C Silvestri, and O Bottauscio, 2012, "Direct determination of the absorbed dose to water from 125I low dose-rate brachytherapy seeds using the new absorbed dose primary standard developed at ENEA-INMRI", Metrologia **49**(5)

2011 D T Burns, C Kessler, P Roger, M P Toni, **M Pinto**, M Bovi, G Cappadozzi, and C Silvestri, 2011, "Key comparison BIPM.RI(I)-K2 of the air-kerma standards of the ENEA-INMRI, Italy and the BIPM in low-energy x-rays", Metrologia **48** Tech Suppl 06010

Major technical reports: Radiation Dosimetry

2019 **Pinto, M** and Pimpinella, M, "16NRM03 RTNORM WP1 Report on ENEA-INMRI measurements of Farmer Chambers in water and in air (A1.2.2), activity 1.2.4 (cross calibrations), 1.2.6 (this report), and early contribution to Activity 1.2.8"

Pinto, M, D'Arienzo M, Bovi M, Alonzo, M, Pimpinella M and Toni M P 2019, "Report to the CCRI section I on the activity carried out at ENEA-INMRI on photon and charged-particles dosimetry in the period 2017- 2019", 25th CCRI(I) Committee Meeting, BIPM, France

2017 **Pinto M**, D'Arienzo M, Bovi M, Guerra A S, Pimpinella M and Toni M P 2017, "Report to the CCRI section I on the activity carried out at ENEA-INMRI on photon and charged-particles dosimetry in the period 2015- 2017", 24th CCRI(I) Committee Meeting, BIPM, France

McEwen M, Burns D T, D'Arienzo M, de Pooter J A, **Pinto M** and Rapp B 2017, "Report to CCRI(I) on the recommendations of ICRU Report 90", 23rd CCRI(I) Committee Meeting, BIPM, France

2015 **Pinto M**, D'Arienzo M, Bovi M, Guerra A S, Pimpinella M and Pia Toni M P, 2015, "Report to the CCRI section I on the activity carried out at ENEA-INMRI on photon and charged-particles dosimetry in the period 2013- 2015", 22nd CCRI(I) Committee Meeting, BIPM, France

Massimo Pinto, Maria Pimpinella, Maurizio Quini, Marco D'Arienzo, Iordana Astefanoaei, Stefano Loreti, and Antonio Stefano Guerra, "Absorbed dose to water measurements in medium energy filtered x-ray beams by a new in-water-phantom graphite calorimeter", Report D.1.2.3 in EMPIR MetrExtRT

Massimo Pinto, Maria Pimpinella, and Antonio Stefano Guerra, "ENEA-INMRI Report to the EURAMET.RI(I)-S13 comparison of primary absorbed dose to water standards in the medium-energy x-ray range"

2013 M.P. Toni, **M. Pinto**, M. D'Arienzo, A.S. Guerra, M. Pimpinella, M. Bovi, 2013, "Report to the CCRI section I on the activity carried out at ENEA-INMRI on photon and charged-particles dosimetry in the period 2011-2013", 21st CCRI(I) Committee Meeting, BIPM, France

2012 Maurizio Bovi, Marco Capogni, Claudio Caporali, Marco D'Arienzo, Pierino De Felice, Antonio Stefano Guerra, Maria Pimpinella, **Massimo Pinto**, Maria Pia Toni, "Ionizing radiation metrology in cancer radiation therapy", Energia, Ambiente ed Innovazione, **3**

2011 M.P. Toni, **M. Pinto**, A.S. Guerra, M. Pimpinella, M. Bovi, S Loreti, 2011, "Report to the CCRI section I on the activity carried out at ENEA-INMRI on photon and charged-particles dosimetry in the period 2009-2011", 21st CCRI(I) Committee Meeting, BIPM, France

Other types of scientific publications

2016 ESTRO Newsletter, Editors' pick, Physics Corner on: Pinto *et. al.*, "A graphite calorimeter for absolute measurements of absorbed dose to water: application in medium-energy x-ray filtered beams", **May-June** 2016

2012 Vered Anzenberg Shaffer, Marjan Boerma, Manuela Buonanno, Sylvain Costes, Tracy Criswell, Geraldine Gonon, Badri Narain Pandey, **Massimo Pinto**, and Sara Rockwell, "Broadcasting in the airways: the fifth anniversary of the Radiation Research podcast", Radiation Research, **178**

Partecipation in the European Area Metrology Research Programmes

2019-2022 Workpackage I Leader, "Primary standards and traceable measurement methods for X-ray emitting electronic brachytherapy devices (EMPIR 18NRM02 PRISM-eBT)", http://www.ebt-empir.eu/

Coordinator, 2017-2019 "k_Q factors in modern external beam radiotherapy applications to update IAEA TRS-398 (EMPIR 16NRM03 RTNORM)", http://www.rtnorm.eu

2012-2015 Workpackage I Leader, "Metrology for Radiotherapy using Complex Radiation fields (EMRP MetrExtRT)", http://radiotherapy-emrp.eu

Workpackage IV Leader, "Biologically-Weighted Quantities in Radiotherapy (EMRP BioQuaRT)", https://www.ptb.de/emrp/bioquart-home.html

2009-2011 "Increasing Cancer Treatment Efficacy Using 3D brachytherapy (iMera Plus Brachytherapy)"

Ad hoc peer review

in radiation dosimetry Metrologia, Medical Physics, Radiation Measurements, Journal of Contermporary Brachytherapy, International Journal of Environmental Research and Public Health, Nuclear Instruments and Methods A

in radiation biology Radiation Research, International Journal of Radiation Biology, British Journal of Radiology, Molecular Cancer Research, International Journal of Epidemiology, Journal of Pharmacy and Farmacology

Teaching Experience

2018 Lecturer, First and Second Level Master's Course in Protection in Chemical, Radiological, Biological, Nuclear and Explosives Events, June and July 2018, University Tor Vergata, Rome, Italy

2016 Lecturer, First and Second Level Master's Course in Protection in Chemical, Radiological, Biological, Nuclear and Explosives Events, March and April 2016, University Tor Vergata, Rome, Italy

2008 Lecturer, Lazio Region Science Festival "Apriamo la Mente", May 16-17, Lazio Region, Italy

2006 Assistant Lecturer, Radiation Biology module, Radiology Residence Training, New Jersey Medical School (New Jersey, USA)

2002 Assistant Lecturer, Electromagnetism module, Physics course for Biology BSc students, University of Naples Federico II, Naples, Italy

Invited Lectures

2019 International Conference on Dosimetry Standards and Applications IDOS2019, June 2019, "The contribution of the RTNORM EU consortium to the update of the kQ factors for the International Dosimetry Code of Practice IAEA TRS 398"

2018 Japanese Medical Physics Society, April 2018, "The RTNORM contribution to the update of the kQ factors for the international dosimetry Code of Practise IAEA TRS 398", Annual Meeting, Yokohama, Japan

Brasilian Congress of Ionizing Radiation Metrology, November 2018, "The contribution of a primary standards dosimetry laboratory: ENEA-INMRI, Italy", Rio de Janeiro, Brasil

2016 Elettra Sincrotrone Trieste, Italy, March 9, 2016, "I campioni nazionali e la riferibilità delle misure dosimetriche con radiazione fotonica di bassa energia (< 50 keV) per scopi medici e radioprotezionistici"

2007 Vatican Scientific Academy, Rome, Italy, December 20, Invited oral presentation on the "Cosmic Silence" experiment

Keynote lecture, Annual Meeting of the Italian Association for Medical Physics, September, Congress Center "Il Ciocco", Castelvecchio Pascoli (Lu), Italy

Computing skills

OS	Linux, Unix, Mac, Windows
Languages	C++, Visual C++, FORTRAN 90, Python, LaTeX
Data Viz	DataGraph, Matplotlib, Seaborn
versioning	Git
databases	MySQL
Web	Plone CMS, Wordpress

Major scientific publications in peer-reviewed journals: Radiation Biology

2011 G. Esposito, A. Campa, **M. Pinto**, G. Simone, M. A. Tabocchini and M. Belli, 2011, "Adaptive Response: Modeling and Experimental Studies", Radiation Protection Dosimetry, **143** (2-4)

2010 **M. Pinto**, E.I. Azzam, and R.W. Howell, 2010, "Investigation of Adaptive Responses in Bystander Cells in 3D Cultures Containing Tritium-Labeled and Unlabeled Normal Human Fibroblasts", Radiation Research, **174**(2)

2009 Carbone, M. C., **Pinto, M.**, Antonelli, F., Amicarelli, F., Balata, M., Belli, M., Conti Devirgiliis, L., Ioannucci, L., Nisi, S., Sapora, O., Satta, L., Simone, G., Sorrentino and E., Tabocchini, M.A., 2009, "The *Cosmic Silence* Experiment: on the putative adaptive role of environmental ionizing radiation", Radiat. and Environ Biophysics**, 48**

2008 Antonelli, F., Belli, M., **Pinto, M.**, Sapora, O., Sorrentino, E., Simone, G., Tabocchini, M. A., Amicarelli, F., Conti De Virgiliis, L., Carbone, M. C.. Balata, M., Ioannuci, L., Nisi, S. and Satta, L. 2008, "PULEX: Influence of environment radiation background on biochemistry and biology of cultured cells and on their response to genotoxic agents", Il Nuovo Cimento C

2007 **Pinto, M** and Howell, R. W. "Concomitant quantification of targeted drug delivery and biological response in individual cells", Biotechniques Jul;**43**(1)

Howell, R. W., Neti, P. S. V., **Pinto, M.**, Gerashchenko, B. I., Narra, V. R. and Azzam, E. I., 2007,"Challenges and Progress in Predicting Biological Responses to Incorporated Radioactivity", Radiat Prot Dosimetry **122**, 521-27

2006 **Pinto, M.**, Azzam, E. I. and Howell, R. W., 2006, "Bystander Responses in human 3D cultures containing radiolabeled and unlabeled cells", Radiat Prot Dosimetry **122**

2005 **Pinto, M.**, Prise, K. M. and Michael, B. D., 2005, "Evidence for complexity at the nanometer scale of radiation induced DNA DSB as a determinant of rejoining kinetics", Radiation Research **164**(1)

2004 **Pinto, M.**, Prise, K. M. and Michael, B. D., 2004, "A Monte Carlo model of DNA double-strand break clustering and rejoining kinetics for the analysis of pulsed-field gel electrophoresis data", Radiation Research **162**(4)

2002 **Pinto, M.**, Prise, K. M. and Michael, B. D., 2002, "Quantification of radiation induced DNA double-strand breaks in human fibroblasts by PFGE: testing the applicability of random breakage models", Int J of Radiation Biology, **78**

Pinto, M., Prise, K. M. and Michael, B. D., 2002, "DSB rejoining after irradiation of human fibroblasts with X-rays or alpha-particles: PFGE studies and numerical models", Radiat Prot Dosimetry, **99**

2001 Prise, K. M., **Pinto, M.**, Newman, H. C. and Michael, B. D., 2001, "A review of studies of ionizing radiation-induced double-strand break clustering", Radiation Research, **156**

2000 **Pinto, M.**, Newman, H. C., Prise, K. M. and Michael, B. D., 2000, "Quantification of DNA damage by PFGE: development of an analytical approach to correct for the background distribution", Int J of Radiation Biology, **76**

Awards and recognitions in Radiation Biology

2006 Scholar in Training Travel Award, Radiation Research Society (RRS) 53rd meeting, Philadelphia, Pennsylvania, USA, 4-8 November. Oral presentation

Gallo Award for Outstanding Cancer Research, The Cancer Institute of New Jersey and The New Jersey State Commission on Cancer Research, Annual Retreat, Piscataway, NJ, USA, May 25. Oral presentation

2005 Young Investigator Award, 14th Symposium on Microdosimetry, Venezia, Italy, November 13-18. Oral presentation

2002	Young Investigator Award, Annual Biophysics School, Bressanone, Italy, September 10-13. Poster presentation
2001	Young Investigator Award, 7th International Workshop, Radiation Damage to DNA, Orleans, Nouans le Fuzelier, France, September 2-7. Oral presentation
	Young Investigator Award, 13th Symposium on Microdosimetry, Stresa, Lake Maggiore, Italy, May 27-June 1. Oral Presentation
2000	Young Investigator Award, Italian Society for Radiation Research (SIRR) 10th meeting, Frascati, Italy, November 19-22. Oral Presentation
	Young Investigator Award, Radiation Research Society (RRS) 47th meeting, Albuquerque, New Mexico, USA, 28 April-3 May. Oral and Poster presentation
	Young Investigator Award, Association for Radiation research (ARR) meeting, Bristol, UK, 10-12 April. Oral and Poster presentation. Also received a prize for one of the best three poster presentations at the meeting, *ex aequo*
1999	First prize for the best Laurea (*BSc*) graduation thesis in the field of radiation research in 1998, Italian Society for Radiation Research (SIRR), Annual Meeting, Padua, Italy. Also gave an oral presentation

Other Scientific Interests

Science Communication	I have been a science communication blogger since 2006, writing on the Galileo science journal as guest research scientist blogger, and later on the multi-authored blog Fisici per il mondo. Between 2005 and 2013 I have directed the Podcast for the scientific monthly journal *Radiation Research* of the Radiation Research Society