Curriculum vitae

PERSONAL INFORMATION

Silva Bortolussi

hGender Female | Date of birth 08 November 1978

WORK EXPERIENCE

15 Nov 2019 – Present

Associate Professor

Dept. of Physics, University of Pavia
via A. Bassi 6, 27100 Pavia, Italy
ORCiD:0000-0003-0452-2255

- Scientific association to National Institute of Nuclear Physics (INFN)
- Member of the Scientific National Commission 5 of INFN (Technological, interdisciplinary and accelerators research)
- Member of the Management Board of the National Technological Cluster of Life Science ALISEI
- Secretary General of International Society for Neutron Capture Therapy. Work to improve the role of ISNCT as a promoter of BNCT and as supporter of research and application in different Countries.
- Research in Boron Neutron Capture Therapy (BNCT) - Computational dosimetry, radiobiology and study of the performance of neutron beams for clinical BNCT
- Head of the Research Unit of the INFN projects ENTER_BNCT, and NEPTUNE, participant in INFN AI_MIGHT and FRIDA projects
- Chair of University Courses *Simulations in biomedical physics*, MSc in Physics, *Experimental Physics*, BSc in Biotechnology and *Applied Physics*, BSc in Radiology Techniques
- Visiting researcher at National Commission of Atomic Energy (Argentina)
- Visiting professor at NUAA, Nanjing (China), chair of the Summer Course *Monte Carlo Simulations in medical physics*
- Supervisor and co-supervisor of MSc, BSc and PhD students (also International)
- Member of the Technical and Scientific Committee of GLOBEC - University of Pavia
- Delegate for UniPV in the Latin America Working Group, COIMBRA Group
- Member of the Research and 3rd mission Committee of the Dept of Physics, University of Pavia
- Management of international collaborations. Member of the bilateral Committee of the Cooperation Agreement between INFN and CNEA (Argentina). Scientific coordinator of the Specific Agreement between INFN and CNEA in BNCT. Coordination of collaboration with Chinese Institutions.
- Fund raising activities
- Dissemination and Public Engagement activities (European Researchers Night)

15 Nov 2016 - 14 Nov 2019

Senior Researcher

Dept. of Physics, University of Pavia
via A. Bassi 6, 27100 Pavia, Italy

- Research in Boron Neutron Capture Therapy (BNCT) - Computational dosimetry, radiobiology and study of the performance of neutron beams for clinical BNCT
- Chair of University Courses *Experimental Physics*, BSc in Biotechnology and *Simulations in biomedical physics* for the MSc in Physics
- Visiting professor at NUAA, Nanjing (China), chair of the Summer Course *Monte Carlo Simulations in medical physics*
- Visiting researcher at National Commission of Atomic Energy (Argentina)
- Supervisor and co-supervisor of MSc, BSc and PhD students (also International)
- Delegate for UniPV in the Latin America Working Group, COIMBRA Group
- Delegate for INFN in the National Technological Cluster of Life Science ALISEI
- Secretary General of International Society for Neutron Capture Therapy.
- Scientific association to National Institute of Nuclear Physics (INFN)
- PI of the INFN project BEAT_PRO, local responsible of MAECI-MOST project Italy-China NEU_BEAT and of INFN call NEPTUNE, coordinator of Technology Transfer projects for INFN, participant in INFN IT_STARTS project
- Management of international collaborations. Coordination of work to sign a Memorandum of Understanding between INFN and CNEA (Argentina), signed in November 2015. Work on the design of a project funded in the Program of Scientific and Technological Cooperation between Italy and China 2016-2018 (NEU_BEAT).
- Member of Executive Board of SIRR (Società Italiana per le Ricerche sulle Radiazioni), Member of Organization Committee of SIRR National Congress (Rome, September 2018)
- Fund raising activities
- Dissemination activities: talks in national and international congresses, workshops and seminars
- Public Engagement: Organizer of the European Researcher Night and of FameLab Italia

16 Jun 2014 – 5 Nov 2016

Fixed Term Researcher

National Institute of Nuclear Physics (INFN), Unit of Pavia
via A. Bassi 6, 27100 Pavia, Italy

- Research in Boron Neutron Capture Therapy - Experimental measurements of boron concentration in tissues and Monte Carlo calculations of neutron dosimetry and treatment planning; tailoring of a neutron beam from an accelerator source
- Head of the research unit of INFN experiments NeTTuNO and Neutargs
- Member of the Executive Board of International Society for Neutron Capture Therapy
- Supervisor and co-supervisor of MSc, BSc and PhD students (also International)
- Visiting researcher at National Commission of Atomic Energy (Argentina)
- Management of international collaborations
- Fund raising activities
- Dissemination activities: talks in national and international congresses, workshops and seminars. President of the Organizing Committee of 8th Young Researchers BNCT Meeting (Pavia, September 2015)
- Public Engagement: Organizer of the European Researcher Night
- Chair of University Courses *Experimental Physics*, BSc in Biotechnology and *Simulations in biomedical physics*, MSc in Physics
- Visiting professor at University of Campinas, Brasil, Chair of the intensive Course *Monte Carlo Simulations in medical physics*

1 Dec 2013 – 31 May 2014

Post Doc Position

Dept. of Physics, University of Pavia

- Research in Boron Neutron Capture Therapy - Boron concentration in tissues and Monte Carlo calculations for BNCT
- Scientific association to INFN. Local responsible of the INFN experiment NeTTuNO and Neutargs
- Supervisor and co-supervisor of MSc, BSc and PhD students (also International)
- Visiting researcher at National Commission of Atomic Energy (Argentina)
- Management of international collaborations
- Fund raising activities
- Dissemination activities: talks in national and international congresses, workshops and seminars. President of the Organizing Committee of 8th Young Researchers BNCT Meeting (Pavia, September 2015)

1 Dec 2010 – 30 Nov 2013

Junior Researcher

Dept. of Physics, University of Pavia

- Principal Investigator of a research project funded by Italian Ministry of University and Education (FIRB-Futuro in Ricerca 2008), dedicated to BNCT of bone tumours. Research activities: in vivo and in vitro boron concentration measurements and effectiveness study od BNCT mediated by different boron carriers.
- Chair of University Course *Simulations in biomedical physics* for the MSc in Physics
- Scientific Association to INFN, Participant in the INFN experiment Widest 1
- Supervisor and co-supervisor of MSc, BSc and PhD students
- Visiting researcher at National Commission of Atomic Energy (Argentina)
- Fund raising activities
- Dissemination activities: talks in national and international congresses, workshops and seminars.
- National Scientific Qualification, for the position of associate professor

1 Dec 2007 – 30 Nov 2010

Post Doc Position

Dept. of Physics, University of Pavia

- Research in Boron Neutron Capture Therapy
- Scientific association to INFN. Participant the INFN experiment Widest1
- Co-supervisor of MSc students
- Tutor for the University Courses of *Simulations in bio-sanitary field" and "Physics of Ionizing Radiation* for the MSc in Physics and *Experimental Physics* for the BSc in Biotechnologies (University of Pavia)
- Visiting researcher at National Commission of Atomic Energy (Argentina)
- Fund raising activities
- Dissemination activities: talks in national and international congresses, workshops and seminars. Member of the Organizing Committee of 13th International Congress on NCT (Florence, November 2008)

EDUCATION AND TRAINING

2013 – 2015

II Level Master - MIT Open Innovation and Knowledge Transfer - Thesis Title: 'A Successful External Funds Service'

Marks: 110/110 cum laude

MIP Schhol of Management, Polytechnic of Milan, Italy

- Project Management
- Innovation Management
- Open Innovation
- Technology Transfer
- Personal Development

2004 – 2007

PhD - Thesis: 'Boron Neutron Capture Therapy of Disseminated Tumours'

University of Pavia, Italy

- Experimental and computational study of BNCT for metastatic spread in lung and liver
- Participation to national and international congresses
- Participation to national and international PhD schools

1997 – 2004

MSc in Physics - Thesis: 'Una originale configurazione del campo neutronico per una migliore uniformità della dose nell'organo espiantato' Marks: 110/110 cum laude

University of Trieste, Italy

- Computational simulation to optimize the thermal neutron irradiation facility at the TRIGA Mark II research reactor of Pavia University. The facility was designed for the irradiation of explanted organs

1993 – 1997

High School - Scientific Curriculum

Marks: 60/60

Liceo Scientifico E. Majorana, S.Vito al Tagliamento, PN, Italy

Training Courses

- 2020 NEA PHITS Course, CNEA, Buenos Aires, Argentina
- 2011 IAEA Course: "Monte Carlo Radiation Transport and Associated Needs for Medical Applications", ICTP, Trieste, Italy
- 2010 MatLab Course, Universidad Tecnológica Nacional, Buenos Aires, Argentina
- 2006 MCNPX workshop (Training Course on MCNPX, Intermediate Level), at ENEA, Italy.
- 2006 Nuclear Physics Software Course, Alghero, Italy
- 2005 Nuclear Physics School Course, Otranto, Italy

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C2
Spanish	C1	C2	C2	C2	C1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2: Proficient user
Common European Framework of Reference (CEF) level

Communication skills

public speaking: Oral presentations in several congresses and seminars are a continuous training in public speaking, further improved by personal development course attended during the MIP Master at Milan Polytechnic. Ability to communicate to non-technical public through presentations and lectures. Communication skills are also improved due to teaching activities carried out over the years.
negotiation skills: working at the intersection of different scientific fields, with the constant necessity to raise funds and promoting applied physics activities, has developed the skill of negotiation and mediation.
intercultural skills: one of my principal activities is to foster and deepen international collaborations. In particular, I developed a strong bound with Argentinean colleagues working at Comisión Nacional de Energía Atómica (CNEA) and with Chinese BNCT scientific groups of Nanjing University of Aeronautics and Astronautics. These collaborations, sustained by grants and continuous researchers exchanges, have stimulated the interests and the capacity to make relations in very different environments.

Organisational / managerial skills

team work: BNCT is an intrinsically multidisciplinary field, requiring different kinds of expertise. In particular I work with biologists, chemists, medical doctors, sharing knowledge, ideas and results. The coordination of experiments and the tutoring of younger collaborators has improved the ability to work in team.
leadership: I constantly work on my capacity to inspire, motivate and enable other people to work together for the realization of ideas. Working in a field of science that stays in the borders between fundamental research and application, it is necessary to form a group of collaborators sharing the same vision and keeping high levels of enthusiasm and dedication. In coordinating younger colleagues, I push for differentiating the technical skills while maintaining a strong focus on the final objective. I pursue the enhancement of personal interests and self satisfaction as engines to stimulate new ideas and produce valuable results.
management: I developed capabilities such as designing projects, managing the time-line and the budget, evaluating the advancements of projects and producing reports and documentation. These skills have been enlarged and optimized with the II level Master in management attended at Polytechnic of Milan.
organization: I have played major roles in the organization of national international congresses and in dissemination events, taking care of both scientific and logistic aspects

Job-related skills

Simulations of neutron flux distribution and absorbed dose through the employ of specific Monte Carlo codes, design of neutron irradiation facilities for BNCT, Treatment Planning calculations for BNCT with specific software as NCTPlan to test the dosimetric performance of neutron beams, charged particle spectrometry for boron concentration measurements in biological tissues, neutron autoradiography techniques for imaging and quantification of boron in solid and liquid samples

Computer skills

Advanced user of Monte Carlo codes MCNP and MCNPX, basic user of PHITS, user of Monte Carlo code SRIM, programming languages: C, Fortran, basic level, user of ROOT, good command of Microsoft Office™ tools, basic user of Microsoft Project, good knowledge of Windows and Linux OS.

Driving licence

B

ADDITIONAL INFORMATION

Research Products (Scopus)

- **93 Publications** in peer reviewed International Journals, 17 Proceedings of National and International Congresses, 4 Technical Notes, 5 articles in non-ISI Journals - See Annex 1
- **h-index 19**
- **1243 citations**
- Review Editor on the Editorial Board of Public Health, section of Radiation and Health
- Guest Editor of the Special Issue of Applied Radiation and Isotopes dedicated to 13th ICNCT, 67(7-8), 2009 - Guest Editor of the Special Issue of Nuovo Cimento dedicated to SIRR National Congress 2018 and 2020 - Guest Editor of the Special Issue of Biology dedicated to BNCT 2021
- Reviewer for Radiation Oncology, Medical Physics, Physica Medica, Scientific Reports, Applied Radiation and Isotopes and other International Journals in this sector.
- 12 oral presentations in national and international congresses,
- 17 invited talks-seminars-conferences
- 2 invited talks in a plenary session (International Congress on Neutron Capture Therapy, 2016 and 2018)

Thesis Supervision and Co-Supervision

- 2008 – MSc Physics, Pavia– N. Protti - Studio della distribuzione della dose in polmone di ratto irraggiato al reattore TRIGA Mark II di Pavia (110/110 cum Laude)
- 2012 - MSc Physics, Pavia– I. Postuma - A neutron autoradiography method to measure 10B in biological samples applied to BNCT of osteosarcoma (109/110)
- 2013 – MSc Physics, Pavia– L. Reversi - Studio computazionale per la realizzazione di un fascio di diffrattometria neutronica press oil reattore TRIGA di Pavia (106/110)
- 2014 – MSc Physics, Pavia– M. Ferrari - Computational and experimental dosimetry for cell cultures irradiation in the thermal column of TRIGA reactor (110/110 cum Laude).
- 2015 – MSc Physics, Pavia – J. Valsecchi - Design of a thermal and epithermal neutron facility from proton accelerator
- 2015 – MSc Physics, Pavia– S. M. Valle - Helium ion beams for the eye treatment: an in-silico investigation
- 2016 – PhD Physics, Pavia– I. Postuma - Clinical application of accelerator-based BNCT: optimization of procedures, tailoring of a neutron beam and evaluation of its dosimetric performance
- 2017 – BSc Physics, Pavia– S. Lazzarin - Treatment Planning Systems per la terapia per cattura neutronica sul boro (BNCT)
- 2018 - MSc Physics, Pavia- C. Magni, Neutron activation and dosimetry studies for the design of an accelerator-based BNCT clinical facility at CNAO (110/110 cum Laude) - Musitelli Award for best thesis in appied physics of the Department of Physics (UNIPV)
- 2020 - MSc Physics, Pavia - C. Guidi, Irradiation of reconstructed human skin cultivated in-vitro: computational dosimetry and preliminary radiobiological evaluations for BNCT studies (110/110 cum Laude) - Musitelli Award for best thesis in appied physics of the Department of Physics (UNIPV)
- 2020 - BSc Biotechnology, Pavia- C. Panaro, Misure di concentrazione intracellulare del B11 per la cattura protonica in boro (74/110)
- 2020 - PhD Physics, (University of San Martin and CNEA Buenos Aires, Argentina) L. Provenzano - Investigacion y desarrollo en BNCT para el tratamiento de nuevas patologias - Premio "mejor thesis doctoral 2019-2021 Universidad de San Martin"
- 2021 - MSc Neurobiology, M. Crepaldi, Studio radiobiologico in-vitro sull'efficacia della Boron Neutron Capture Therapy (BNCT) per il glioblastoma multiforme: misura della sopravvivenza cellulare in funzione della dose (110 cum laude)
- 2021 - MSc Physics, B. Marcaccio, From radiobiological experiments to treatment planning in patients: a BNCT dosimetry study (University of Pavia and CNEA, Argentina) (110/110) - Award "Fondazione Grazioli"- Istituto Lombardo-Accademia di Scienze e Lettere - best MSc Thesis in Lombardy Region
- 2021 - PhD Physics, C. Magni (University of Pavia) - Experimental and Computational Study for an Accelerator-Based BNCT clinical facility: a multidisciplinary approach - Award "Neutron matters", Italian Society of Physics.
- 2022 - MSc Physics, M. Avesani (University of Pavia) - Experimental and computational neutron beam characterization at the CN facility of the INFN National Laboratory of Legnaro (110 cum laude)
- 2022 - MSc Physics, E. Simeone (University of Pavia) - Studi dosimetrici per la BNCT del Glioblastoma Multiforme con acceleratore (110 cum laude)
- 2022 - MSc Physics, M. Avesani (University of Pavia) - Experimental and computational neutron beam characterization at the CN facility of the INFN National Laboratory of Legnaro (110 cum laude)
- ongoing: MSc Physics, F.Fede (University of Naples)- In vitro and in silico radiobiological characterization of DNA damage induced by Boron-Neutron Capture Therapy (BNCT)
- ongoing: PhD in Physics on BNCT dosimetry (B. Marcaccio). University of Pavia, Italy
- ongoing: PhD in Physics on radioisotopes for methabolic radiotherapy (F. Barbaro),University of Pavia, Italy
- ongoing: PhD in Physics on BNCT neutron beam optimization (L. Bagnale), University L. Vanvitelli, Caserta, Italy
- 2014 - Member of the PhD committee, University of San Martin, Istituto Sabato, Buenos Aires, Argentina

Research Abroad

- 2007 and 2009 Host: Dr Marcelo Miller, Dept of Instrumentation and Control – National Commission for Atomic Energy (CNEA), Buenos Aires, Argentina
- 2010-2011-2014-2015-2016-2017-2018-2019-2020 Host: Dr Sara J. Gonzalez, Group of Computational Dosimetry and Treatment Planning – CNEA, Buenos Aires, Argentina
- 2015 Host: Prof. Sandro Guedes, University of Campinas, Brasil
- 2019 Hosts: Prof. Y-H. Liu and Prof. X. Tang, Research visiting period at NEUBORON Medtech and NUAA University Nanjing China

Honors and Awards

- Fairchild Award for young researchers, at 11th ICNCT, Japan, 2006
- Giovanni Carcea Award, young researchers in the field of young age tumours, Crotone, 2012
- Organizing Committee of 13th ICNCT, November 2008, Florence, Italy
- Scientific Committee of 14th, 15th and 16th ICNCT (2010 Argentina, 2012 Japan and 2014 Finland, respectively).
- Scientific Committee of 7th Young researcher BNCT meeting, 2013, Granada, Spain.
- President of Organizing Committee of 8th YBNCT, September 2015, Pavia, Italy
- Member of Organizing Committee of 18th National Congress of SIRR, September 2018, Rome, Italy
- Member of Organizing Committee of 19th National Congress of SIRR, November 2020, on-line edition

Membership

- Secretary General of International Society for Neutron Capture Therapy (ISNCT)
- Member of Executive Board of International Society for Neutron Capture Therapy (ISNCT) (2012-2016)
- Member of the International Advisor Committee of PhD in Nuclear Technology, instituto Dan Beninson, Universidad Nacional de San Martin, Buenos Aires, Argentina.
- Councillor of ISNCT (2010-2016)
- Member of Technical-Scientific Committee and of Executive Board of GLOBEC, Center for Global Scientific Engagement, University of Pavia
- Member of Executive Board of SIRR (Società Italiana per le Ricerche sulle Radiazioni) (2016-2020)
- Member of Società Italiana di Fisica (SIF)

Funded Projects

- 2023-2026 participant in MAECI-NSFC (Italy-China) project AMONG_US
- 2023-2026 participant in PNRR project ANTHEM
- 2023-2025 WP leader of the INFN project ADMIRAL
- 2021-2024 participant in FET Open project NECTAR
- 2020-2022 Head of Research Unit of INFN project ENTER_BNCT
- 2019-2021 UNIPV coordinator of the Erasmus+ project CONSENS
- 2019-2020 Participant in INFN project IT_START
- 2019-2021 Head of Research Unit in INFN call NEPTUNE
- 2016-2018 Head of Research Unit in Project Italy-China – Executive Program of Scientific and Technological Collaboration 2016-2018: NEU_BEAT (NEUtron BEAms for cancer Treatment)
- 2017-2019 PI of INFN Project BEAT_PRO
- Member of Steering Committee of “Dipartimento di Eccellenza”, Dept of Physics, University of Pavia.
- 2014-2016: participant in Project PIP, CONICET, Argentina.
- 2014-2016: participant in Project PICT "Terapia por Captura Neutrónica en Boro (BNCT) para un tratamiento novel de metástasis múltiples en pulmón: estudio de BNCT ex-situ en oveja y estudio de BNCT in-situ en rata", CONICET, Argentina.
- 2011-2013 : PI of project FIRB-Futuro in Ricerca 2008 “La terapia per cattura neutronica: una nuova prospettiva per il trattamento dell’osteosarcoma”
- 2013-2015 : head of the research unit of the INFN experiments NeTTuNO and NeuTargs
- 2013-2015: participant in INFN “progetto premiale” MUNES "Multidisciplinary Neutron Source"
- 2012-2014 : head of the research unit of a project funded by Italian Ministry of Health in the scheme “ricerca finalizzata 2010”
- 2011-2012: participant in CARIPLO project "Characterization of boron carrying magnetic nanoparticles for MRI assisted BNCT (Boron Neutron Capture Therapy)"
- 2011-2012: participant in INFN experiment MIMO-BRAGG
- 2011-2013: participant in INFN experiment ARCO
- 2009-2012: participant in INFN experiment Widest1
- 2007-2008 participant in INFN experiment Widest
- 2007-2008: participant in PRIN 2006 "Trattamento metastasi polmonari mediante cattura neutronica: studi preliminari"
- 2007-2008: participant in INFN experiment ELBA
- 2005-2006: participant in PRIN 2004 "Misura di assorbimento del boro in tessuto polmonare di ratto affetto da tumore"
- 2006-2010: participant in an International FIRB project 2004 "Studi proteomici e farmacocinetici in relazione alla terapia antitumorale BNCT
- 2004-2006: participant in INFN experiment TAoRMINA3

PERSONAL INFORMATION

Francesco Tommasino

Gender Male | Date of birth 10/03/1985 | Nationality Italian

CURRENT POSITION

Since 2nd March 2023

Associate Professor
University of Trento, Department of Physics

PREVIOUS POSITIONS

Since March 2020
To 1st March 2023

Assistant Professor (Ricercatore a Tempo Determinato di tipo B)
University of Trento, Department of Physics

Since January 2016
To 1st March 2020

Junior Researcher (Ricercatore a Tempo Determinato di tipo A)
University of Trento, Department of Physics

Since 1th May 2015
To 31st December 2015

Visiting Researcher at INFN-TIFPA (Trento, Italia)
Research Activity in collaboration with the Trento Proton Therapy Centre.

Since 1st May 2014
To 31st December 2015

Post-Doc

GSI Helmholtz Institute for Heavy Ion Research - Darmstadt (Germany).

Research Topic: “Radiobiological Aspects of treatment planning with protons or heavier ions”.

EDUCATION

Since 2nd April 2011
To 23rd June 2014

PhD

Technical University of Darmstadt (Germany) / GSI Helmholtz Institute for Heavy Ion Research - Darmstadt (Germany)

Thesis: “DNA damage induction and processing following exposure to low and high LET radiation: the role of micrometre-scale clustering in higher-order chromatin structures”.

Since 20th February 2008
To 17th January 2011

Master Degree in Biomedial Engineering

Grade: 110/110 cum laude

University of Rome “Sapienza”

Thesis: “Characterization of a beam monitor device for carbon ion hadrontherapy”.

PERSONAL SKILLS

Mothertongue Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Listening	Reading
English	C1	C2	C1	C1	C2
German	B1	B1	A2	B1	B1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

COMMUNICATION SKILLS

- Good communication and presentation skills gained through active participations to international conferences and scientific meetings.
- Excellent technical and scientific writing skills acquired with the preparation of scientific papers and experimental reports.

ORGANIZATIONAL / MANAGEMENT SKILLS

- Good management and collaboration skills acquired in the framework of scientific collaborations (e.g. FOOT, MoVe IT).
- Good skills in the coordination of the scientific activity of small research groups.
- Good organizational skills gained previously through the organization of small sport and social events, and more recently through the organization of international scientific meetings and workshops.

PROFESSIONAL SKILLS

- Biophysical modelling of radiation effects, Monte Carlo, particle treatment planning, NIM/VME electronics, radiation detection, data analysis, radiation biology.
- Good team player skills developed thanks to the long lasting practice of team-sport activities, and further improved in the context of scientific collaborations and experimental activities.
- Problem solving capabilities gained through the experimental work performed during the Master Thesis and especially during the PhD years.
- Open-minded person, used to work in interdisciplinary and multi-cultural environments.

COMPUTER SKILLS

- Good knowledge of Windows and Linux operating systems.
- Good knowledge of C and C++ programming languages.
- Good command of Microsoft Office™ tools.
- Good knowledge of technical and scientific software (ROOT, Mathematica, Matlab, ImageJ).
- Monte Carlo codes: Geant4, FLUKA.

DRIVING LICENSE

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ADDITIONAL INFORMATION

Publications

See attached list of selected publications.

Scientific Activity and Responsibility

- Local Coordinator for the XpCalib INFN project (since 2020).
- Local Coordinator for the FOOT (FragmentatiOn Of Target) INFN project (since 2017), Run Coordinator for Experimental Campaign 2019 at GSI.
- Member of INFN MoVe IT (Modelling and Verification for Ion Therapy) CSN 5 Call Project.
- PI of the Caritro-financed project “Development of a 4D phantom for dosimetric measurements of moving targets in hadron therapy”.
- PI of the VRT foundation-financed project “Proton3D”.
- Contact Person for the Experimental Facility at the Trento Proton Therapy Centre and Coordinator of the Program Advisory Committee (PAC) for the evaluation of beam time requests.

Grants:

- VRT Foundation “Bando 3.0 Impact Innovation 2021” – “Proton3D”
- Caritro Foundation “Bando Ricerca e Sviluppo Economico 2017” – “Development of a 4D phantom for dosimetric measurements of moving targets in hadron therapy”
- MIUR funding for basic research activities “Finanziamento delle Attività Base di Ricerca” 2017

Conferences:

- 47th Annual Meeting of the European Radiation Research Society 2022 Catania – Organizing Committee.
- INFN 2022 L’Aquila – Invited Speaker.
- Workshop SIRR “Nuove frontiere in radioterapia: basi radiobiologiche di approcci innovativi” 2021 – Organizing Committee.
- 1st Workshop - Trento Proton Beam Line Facility 2020 – Organizing Committee.
- 39° Congress of the European SocieTy for Radiotherapy and Oncology (ESTRO) 2020 Vienna Online – Poster.
- Particle Therapy Co-Operative Group Annual Meeting 2019 Manchester (UK) – Oral Poster.
- 38° Congress of the European SocieTy for Radiotherapy and Oncology (ESTRO) 2019 Milano – Poster.
- 37° Congress of the European SocieTy for Radiotherapy and Oncology (ESTRO) 2018 Barcelona – Oral Poster.
- X Congress of the Italian Association of Medical Physics (AIFM) 2018 Bari – Talk
- International Symposium on Microdosimetry 2017 Venice – Talk.
- Annual Congress of Italian Physics Society 2017 Trento – Invited Talk.
- International Symposium on Ion Therapy 2016 Milano – Invited Talk.
- Particle Therapy Co-Operative Group Annual Meeting 2016 Praga (Cech Republic) – Poster.
- Annual Congress of Italian Physics Society 2015 Rome – Talk.
- International Symposium on Microdosimetry 2013 Treviso – Poster.
- GBS Annual Meeting 2013 Darmstadt (Germany) – Poster.
- GBS Annual Meeting 2012 Munich (Germany) – Poster.

Teaching:

- Since AA 2016-17: *Statistical Methods for Experimental Sciences*, CIBIO, University of Trento.
- Since AA 2020-21: *Medical Biophysics*, Dep. Physics, University of Trento.
- AA 2017-18, 2018-19: Co-lecturer *Radiation Biophysics* course, Dep. Physics, University of Trento.
- AA 2016-17: *Physics Laboratory*, Dep. Engineering, University of Trento.
- AA 2015-16: *Exercise Classes for General Physics I*, Dep. Engineering, University of Trento.
- Lecturer for the Italian Radiobiology Society (AIRB) Training Courses, 2016 and 2017, Trento.

Awards:

- Italian Society for Radiation Research (SIRR): Travel Grant Microdosimetry 2017.
- Italian Physics Society (SIF) 2016: Best Communication in Biophysics.
- GBS Annual Meeting 2012: Travel Grant for Young Scientists.

Memberships:

- Board Member of the Italian Society for Radiation Research (SIRR) since November 2020.
- Associated INFN member since May 2015.
- Member of the Italian Society for Radiation Research (SIRR) since May 2017.
- Member of the Graduate School 1657 “Molecular and cellular response to ionizing radiation” funded by the Deutsche Forschungsgemeinschaft, 2011-2014.
- Member of the HGS HIRe - Helmholtz Graduate School for Hadron and Ion Research, 2011-2014.

Courses:

- Radiation Biophysics, TUD Darmstadt, Summer Semester 2011.
- Short Course in Statistics and Testing Hypothesis – Technical University of Darmstadt 15-16 November 2012.
- Medical Physics and Radiotherapy – Department of Radiotherapy and Oncology, University Hospital Frankfurt am Main 19th July 2013.

Other:

- Scopus h-index = 14 (September 2022).
- Invited speaker at the AIFM Scuola Caldirola 2022 Pisa.
- Organizing Committee VI International Geant4 School (2018) Trento.
- Supervisor of 3 Master and 1 Bachelor Degrees in Physics, Co-Supervisor of 3 Master Degrees in Physics.
- Tutor Activity for the Master Module in Radiation Biophysics, TUD-GSI Institute (2012-2014).
- Active involvement in scientific dissemination events, involving both schools and adults,n collaboration with the Unitversity of Trento, TIFPA and the Trento Proton Therapy center.
- Guest Editor for the Frontiers in Oncology Special Issue “Advances in Radiobiological Modeling in Radiotherapy: From Mechanistic Approaches to Machine-Learning Techniques”.
- Referee for peer-reviewed international Journals: Int J Part Ther, Med Phys, Phys Med Biol, Phys Medica, Frontiers in Oncology, Cancers, Int J Radiat Oncol Biol Phys, Radiat Oncol, Scientific Reports, Oncotargets, JINST, Nucl Instr Meth A, Rad Envir Biophys, Cancer Research and Management, Plos One, IEEE Trans Radiat and Plasma Medical Sciences.

Aggiornato al mese di Marzo 2023. Autorizzo il trattamento dei dati personali ai sensi del D.Lgs. 196/2003

PERSONAL INFO Emanuele Scifoni

Sesso M | Data di Nascita 04/12/1970 | Nazionalita' Italiana

Primo Ricercatore, TIFPA - INFN Trento Institute for Fundamental Physics and Applications, Istituto Nazionale di Fisica Nucleare - Professore a Contratto Dipartimento di Fisica Universita' di Trento

2002– 2005	***PhD in Scienze Chimiche*** (Molecular Quantum Physics), Universita' di Genova, Italia
2004	***Visiting Research Fellow*** al Max Planck Institute for non Linear Dynamics, Goettingen, Germania
2005 – 2006	***Assegnista di Ricerca*** all' Istituto Nazionale di Fisica della Materia (INFM), Roma
2006 – 2007	***Marie Curie Experienced Researcher*** (ER) fellowship al Grenoble Astrophysics Lab (LAOG), University J. Fourier, Grenoble, Francia
2007 – 2010	***FIAS Junior Research Fellow*** al Frankfurt Institute for Advanced Studies, Goethe University, Germania
2010 – 2015	***Senior post-doc*** al GSI – Helmholtz Center for Heavy Ion Research, Darmstadt, Germania
2016 – 2019	***Primo Ricercatore TD*** a TIFPA-INFN, Trento Institute for Fundamental Physics and Applications, Istituto Nazionale di Fisica Nucleare, Italia
2016 – 2017	***Professore a Contratto*** Dipartmento di Fisica, University of Trento, Titolare del corso "Radiation Biophysics"
2017	***Abilitazione Scientifica Nazionale*** *a Professore Associato in Fisica Applicata*
2018	***Abilitazione Scientifica Nazionale*** *a Professore Ordinario in Fisica Applicata*
2019 – presente	***Primo Ricercatore TI*** a TIFPA-INFN, Trento Institute for Fundamental Physics and Applications, Istituto Nazionale di Fisica Nucleare, Italia
2019- presente	***Membro del Collegio di dottorato*** *e professore del corso PhD "Radiation Chemistry"*
2021- presente	***Coordinatore Locale di per la Commissione Scientifica Nazionale 5 (CSN5)***
2022-presente	***Professore a Contratto*** Dipartmento di Fisica, University of Trento, Titolare del corso "Radiation Detection"

Emanuele Scifoni si è laureato in chimica a Roma e ha conseguito il Dottorato di Ricerca in scienze chimiche all'Universita' di Genova con una tesi di chimica fisica quantistica. Dopo una formazione e prima parte della carriera scientifica principalmente basata su fisica molecolare e astrochimica, principalmente con metodi teorici e computazionali, dal 2007, spostandosi al (Frankfurt Institute for Advanced Studies, Goethe University), ha focalizzato i suoi interessi nei modelli biofisici per la radiazione, in particolare su fasci di ioni per l'Adroterapia. Ha sviluppato e esteso ulteriormente questa ricerca, spostandosi al Biophysics Department del GSI (Helmholtz Center for Heavy Ions research) in Darmstadt, dove ha portato avanti anche un'intensa attività su simulazioni di ion track structure, dosimetria, modeling e verifiche sperimentali con irraggiamenti di ioni a energie terapeutiche e ha preso parte fondamentale agli sviluppi più avanzati di importanti codici per la struttura di traccia (TRAX) e per il treatment planning di particelle (TRiP98). Infine, e' arrivato a Trento nel Maggio 2016 come Primo Ricercatore al TIFPA-INFN, Trento Institute for Fundamental Physics and Applications, e Contract Professor alla Universita' di Trento.
Le sue piu' recenti attivita' di ricerca si concentrano su modelli biofisici e treatment planning biologico per protoni e altre particelle cariche e sulla comprensione meccanicistica della FLASH radiotherapy, sulla quale ha già pubblicato diversi lavori di riferimento per il settore.

E' PI per il Progetto "Call" INFN project Call "MoVe IT"- Modeling and verification for Ion Beam Treatment Planning – (che coordina circa 40 ricercatori) finanziato inizialmente per 3 anni e poi esteso per altri 2 fino al 2021, e ha contribuito a molti progetti e grant di successo europei ed internazionali nel campo dell'adroterapia, come EU COST proposal "nano-IBCT" – nanoscale insights in ion beam cancer therapy – 2010-2014 e il Marie Curie ITN

"ARGENT" – Advanced radiotherapy generated by exploiting nanoprocesses and technologies – 2014-2018, per il quale è stato Workpackage Leader. E' inoltre attualmente workpackage leader per la Call INFN NEPTune, Cosupervisore per il Marie Curie Individual fellowship Nanoenhancement e Responsabile Locale per il progetto Horizon2020 STRONG. Da 2022 e' Responsabile Locale e WP leader per la Call "FRIDA" su FLASH radiotherapy.

Ha presentato oltre 40 contributi orali a congressi e scuole internazionali e ha una lunga esperienza didattica maturata con lezioni a diversi corsi universitari, come assistente a "La Sapienza" (Roma) e alla Darmstadt University of Technology (TUD) e titolare alla Universita' di Trento, e nell'organizzazione di International Training Courses per PhD students. Ha co-supervisionato 5 PhD e 8 Master students, fra Germania e Italia ed è membro del Collegio di Dottorato dell'Università di Trento.

Ha pubblicato oltre **90** articoli in riviste peer reviewed, (**h-**index **25**, **2300** citazioni (*)), incluse diverse reviews su invito, e articoli in collaborazione con tutti i maggiori centri di adroterapia del mondo come HIT, NIRS, MedAustron e CNAO. E' referee abituale per molti giornali che spaziano dalla fisica medica alla fisica nucleare e molecolare ed è stato revisore in qualita' di esperto internazionale di numerosi progetti di ricerca e dottorati internazionali. E' Associated Editor di Frontiers in Physics, Guest Editor per Nanomaterials e European Physical Journal D, e Editorial Board Member per Frontiers is Oncology, sezione Radiation Therapy e Frontiers in Physics. Ha recentemente ottenuto l'Abilitazione Nazionale per il settore Fisica Applicata (FIS07) sia come Professore di I fascia (ordinario) che di II fascia (associato).
Dal 2021 e' coordinatore locale per la Commissione Scientifica Nazionale 5 dell'INFN.

(*) Full Publication Record a: https://www.researchgate.net/profile/Emanuele_Scifoni http://orcid.org/0000-0003-1851-5152

Articoli Selezionati rilevanti per il progetto:

1) Scifoni, E. (2015). Radiation biophysical aspects of charged particles: from the nanoscale to therapy. Modern Physics Letters A, 30(17), 1540019.

2) Cerri, M., Tinganelli, W., Negrini, M., Helm, A., Scifoni, E., Tommasino, F., ... & Durante, M. (2016). Hibernation for space travel: Impact on radioprotection. Life sciences in space research, 11, 1-9.

3) Tommasino, F., Rovituso, M., Bortoli, E., La Tessa, C., Petringa, G., Lorentini, S., ... & Scifoni, E. (2019). A new facility for proton radiobiology at the Trento proton therapy centre: Design and implementation. Physica Medica, 58, 99-106.

4) Attili, A., Scifoni, E., & Tommasino, F. (2022). Modelling the HPRT-gene mutation induction of particle beams: systematic in vitro data collection, analysis and microdosimetric kinetic model implementation. Physics in Medicine & Biology, 67(19), 195001.

6) Garbacz, M., Cordoni, F. G., Durante, M., Gajewski, J., Kisielewicz, K., Krah, N., Kopeć, R., Olko, P., Patera, V., Rinaldi, I, Rydygier, M., Schiavi, A., Scifoni, E., Skóra, S.,Tommasino, F. & Rucinski, A. (2021). Study of relationship between dose, LET and the risk of brain necrosis after proton therapy for skull base tumors. Radiotherapy and Oncology, 163, 143-149.

5) Scifoni, E., Surdutovich, E., & Solov'yov, A. V. (2010). Spectra of secondary electrons generated in water by energetic ions. Physical Review E, 81(2), 021903.

7) Boscolo, D., Krämer, M., Fuss, M. C., Durante, M., & Scifoni, E. (2020). Impact of target oxygenation on the chemical track evolution of ion and electron radiation. International Journal of Molecular Sciences, 21(2), 424.

8) Cordoni, F. G., Missiaggia, M., Scifoni, E., & La Tessa, C. (2023). An Artificial Intelligence-based model for cell killing prediction: development, validation and explainability analysis of the ANAKIN model. Phys Med Biol. (in print) https://doi.org/10.1088/1361-6560/acc71e

9) Boscolo, D., Krämer, M., Durante, M., Fuss, M. C., & Scifoni, E. (2018). TRAX-CHEM: A pre-chemical and chemical stage extension of the particle track structure code TRAX in water targets. Chemical Physics Letters, 698, 11-18.

10) Cordoni, F. G., Missiaggia, M., La Tessa, C., & Scifoni, E. (2022). Multiple levels of stochasticity accounted for in different radiation biophysical models: from physics to biology. International Journal of Radiation Biology, 1-16.