

Maria Giuseppina Bisogni is associate professor of medical physics at the Department of Physics "E. Fermi" of the University of Pisa and research associate at the Pisa section of the National Institute of Nuclear Physics (INFN). In her career she has always been involved in the development of systems for medical imaging using techniques derived from nuclear physics. She has directed numerous research projects including the INSIDE project, funded by the Italian Ministry of University and Research, INFN and the National Center for Hadrontherapy Oncology (CNAO). INSIDE is an imaging system for the in vivo verification of hadrontherapy treatments currently under clinical trials at CNAO.

- **EDUCATION**

2000 Specialist in Medical Physics, Final grade: "50/50 cum Laude" specialization school in medical Physics, Dept. of Physics, Univ. of Pisa, Italy  
1999 PhD in Physics, Dept. of Physics, Univ. of Pisa, Italy, PhD supervisor: Prof. Arnaldo Stefanini  
1994 Master Sc in Physics, Final grade: "110/110 cum Laude", Dept. of Physics, Univ. of Pisa, Italy

- **CURRENT POSITIONS**

2014 – to date Associate professor, Department of Physics, University of Pisa, Italy  
2002 – to date National Institute for Nuclear Physics (INFN) associate researcher Italy

- **PREVIOUS POSITIONS AND FELLOWSHIPS**

2002-2014 Researcher with Tenure, Dept. of Physics, Univ. of Pisa, Italy  
2001-2002 Post Doc in Medical Physics, Dept. of Physics, Univ. of Pisa, Italy  
2000-2001 Professorship, Faculty of Science, Univ. of Sassari, Italy  
1999-2000 Fellowship, Medical Physics School, Dept. of Physics, Univ. of Pisa, Italy  
1995-1996 Fellowship, Medical Physics School, Dept. of Physics, Univ. of Pisa, Italy

- **SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2008 – to date Number of Postdocs: **5**/ PhD: **3**/ Master Students: **18** at Department of Physics, University of Pisa, Italy/PhD: **1** at Department of physical sciences, University of Siena, Italy

- **TEACHING ACTIVITIES**

2019 – to date Professor of Radiation Dosimetry, Dept. of Physics, University of Pisa, Italy  
2015 – 2020 Professor, Applied Physics, Master Degree in Dentistry, University of Pisa, Italy  
2014 – to date Professor, Medical Physics, Master Degree in Medicine and Surgery, University of Pisa, Italy  
2004 – to date Professor, Laboratory of Medical Physics, Master Degree in Physics, University of Pisa

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2018, 2015, 2012 member of the Organizing committee of "PET/MR and SPECT/MR: New Paradigms for Combined Modalities in Molecular Imaging Conference" La Biodola, ~200 participants, Isola d'Elba, Italy  
2018, 2015, 2012, 2009 and 2003 member of the Organizing committee and co-editor of proceedings (2015 edition) of "Pisa Meeting on Advanced Detectors", ~400 participants La Biodola, Isola d'Elba, Italy  
2014 member of the Organizing committee "100<sup>0</sup> National Congress of the Italian Physics Society" (SIF), ~1000 participants, Pisa, Italy.  
2013 member of the Organizing committee of "Status and future perspective of charged particle therapy workshop", ~100 participants, CNAO, Pavia, Italy.

- **INSTITUTIONAL RESPONSIBILITIES**

2016 – to date vice-director of the specialization school in Medical Physics, University of Pisa, Italy  
2015 – to date member of the council of the PhD school in Physics, University of Pisa, Italy  
2002 – to date Member of Department of Physics, University of Pisa, Italy

- **COMMISSIONS OF TRUST**

2020 – to date member of the INFN National Scientific Committee 3 for reviewing, promoting and funding experimental research in Nuclear Physics at INFN.

2007-2015 and 2020 – to date member of the INFN Pisa executive board  
 2017– to date member of the Frontier Detectors for Frontier Physics board for promoting international conferences on particle detectors  
 2017 – 2020 member of the Scientific Committee for research funding - Physics area, University of Pisa, Italy  
 2016 – 2018 member of the reviewers panel of the INFN National Scientific Committee 5 calls for strategic research projects  
 2011-2015 member of the INFN Internal Evaluation Committee  
 2007-2015 member of the INFN National Scientific Committee 5 for reviewing, promoting and funding accelerator, detector and Interdisciplinary research activities at INFN.

#### • **RECENT RESEARCH PROJECTS COORDINATION**

-2018-2020 PETRA PET monitoRing in Adroterapia – (regione Toscana POR FESR 2014 – 2020), Clinical validation of the INSIDE PET monitoring system at CNAO. Partners: INFN Pisa, CNAO – *Principal Investigator*  
 --2018-to Date INSIDE 2 Innovative solutions for Dosimetry in Hadrontherapy – (Fondazione CNAO), Clinical validation of the INSIDE bi-modal monitoring system at CNAO. Partners: University of Pisa, Sapienza University of Rome, INFN, CNAO – *Scientific coordinator*  
 -2018-2019 SPECTRON (University Of Pisa, bando Dimostratori Tecnologici)- Dimostratore In-beam PET in adroterapia- *Principal Investigator*  
 -2017- to date FOOT Fragmentation Of target – (INFN CSN3). Nuclear Fragmentation cross section measurements in hadrontherapy and space radioprotection. International Collaboration among INFN, GSI, Nagoya University, Aachen University, University of Strasbourg. *Representative of INFN Pisa In the Institutional Board*  
 -2016-2018 NEOLITE Nuove tecnologie elettroniche di alimentazione in ambiente ostile (Regional Funding POR FESR 2014 – 2020, 1.88 M€) Project coordinator: CAEN spa, Italy- *University of Pisa scientific coordinator*  
 -2013-2016 INSIDE Innovative solutions for Dosimetry in Hadrontherapy (National Funding –ministry of research, MIUR PRIN2010-2011, PN. 2010P98A75, 1M€) Collaboration: Uni Pisa, Uni Torino, Politecnico Bari, Uni Roma La Sapienza, INFN and CNAO - *Principal Investigator*  
 -2011-2013 4DMPET "4D-MPET Four Dimension Magnetic Compatible PET module" (National Funding INFN, 120 k€) Collaboration: INFN di Pisa, Bari, Perugia, Torino *Principal Investigator*

#### • **SCIENTIFIC JOURNALS EDITOR AND REVIEWER**

-2019 - to date European Journal of Medical Physics – Physica Medica - Associate editor  
 -2018 - to date IEEE Transaction on Radiation and Plasma Medical Sciences – Associate editor  
 -Regular reviewer of Nuclear Instruments and Methods A, IEEE Transactions on Nuclear Sciences, IEEE Transactions on Radiation and Plasma Medical Sciences, Journal of Instrumentation, Medical Physics.

#### • **RECENT INVITED ORAL PRESENTATIONS**

- [1] "The INSIDE system: a review of past and recent results", international workshop "Innovative Nuclear instrumentation and measurements in the imaging medical field" (N. 4), International ANIMMA Conference, Portorose, Slovenia, 17/6/2019
- [2] "Un sistema multimodale per il monitoraggio in vivo del range delle particelle cariche in adroterapia", 105 congresso della Societa' Italiana di Fisica dal titolo: L'Aquila, 27/9/2019
- [3] "Particle range monitoring and verification methods in hadrontherapy", International Workshop on Radiation Imaging Detectors, 4/6/2017, Krakow, Poland.

#### • **TECHNOLOGY TRANSFER ACHIVEMENTS**

-International industrial patent (Universita' di Pisa (80%) and INFN (20%), inventors sportelli giancarlo; bisogni Maria giuseppina; kostara eleftheria; morrocchi matteo; camarlinghi Niccolò), title:"Method and apparatus for the acquisition of data for positron emission tomography in hadrontherapy with beam on". Italian n. 102018000000867 (A1) - 15.01.2018. International n. WO2019138384 (A1) 18/7/2019  
 -Co-Founder and board member of the start-up IRIDAE