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CURRICULUM VITAE (MAY 2021)

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QUALIFICATIONS

- 07/2006-07/2010 *University of Rome Tor Vergata, Rome, IT*
Specialization in Medical/Health Physics. 4-year post-graduate degree. Thesis: "*Diffusion Tensor Imaging: tensor field reconstruction, microstructural tissue architecture, conductivity tensor mapping and applications to transcranial magnetic stimulation*".
- 10/2007-11/2007 *European Scientific Institute (European Federation of Organisations for Medical Physics), European School of Medical Physics, Archamps, F*
5 One-Week Sessions: "Medical imaging with non-ionizing radiation", "Medical imaging with ionizing radiation", "Medical computing", "Physics of modern radiotherapy", "Brachytherapy". **Grade: A** (all sessions).
- 10/1998-10/2001 *Ludwig-Maximilians-Universität/Max Planck Institute of Psychiatry, Munich, D*
Ph.D. Student in Natural Sciences (Doctor Rerum Naturalium): "*Quantification of conductive phenomena elicited in anisotropic brain tissue by Transcranial Magnetic Stimulation: physical principles, computational implementation and clinical applications*". [Not Complete]
- 10/1995-07/1999 *University of Rome Tor Vergata, Rome, IT*
Dr. in Physics (Laurea). Work: Medical Physics. Thesis: "*Models for Baroreceptor Reflex Sensitivity*". Projects: "*Solar Neutrino Research and GALLEX*", "*Nonlinear Time Series Analysis*".
- 10/1995-07/1996 *St. Catherine's College, Oxford University, Oxford, UK*
Master of Science: Mathematical Modeling and Numerical Analysis, Distinction. Work: studies on *Measure Theory and Option Pricing, Chaos and Time Series, Electrical Activity of the Heart, Solid Mechanics*.
- 10/1992-07/1995 *Imperial College of Science, Technology and Medicine, University of London, UK*
Bachelor of Science: Physics, 1st Class Honours. Work: computer simulation and statistical investigation of the *Folding of Proteins in Space*.
- 07/1993-08/1993 *Berklee School Of Music, Boston (MA), USA*
5-weeks summer program (Funk and Jazz Improvisation), Grade: A.
- 07/1994-08/1994 *Harvard University, Cambridge (MA), USA*
Summer Term: Micro/Macroeconomics (8 credit hours), **Grade: A.**
- 09/1983-07/1992 *European School Munich, Munich, D*
European Baccalaureate, Grade: A.
- 04/2016 *National Scientific Qualification ("Abilitazione Scientifica Nazionale") for **full professorship***
SSD FIS/07, SC 02/B3 (*Applied Physics*) and 09/G2 (*Biomedical Engineering*)
- 12/2013 *National Scientific Qualification ("Abilitazione Scientifica Nazionale") for **associate professorship***
SSD FIS/07, SC 02/B3 (*Applied Physics*)

WORK EXPERIENCE

– SCIENTIFIC WORK EXPERIENCE –

- 01/2015-
present *University of Rome Tor Vergata, Rome, IT*
Faculty of Medicine, Medical Physics Section
Associate Professor in Medical Physics SSD FIS/07 - Applied Physics
- 07/2018-
present *Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital,*
Harvard/MIT Health Sciences and Technology, Boston, USA
Research Staff, Associate Investigator
Sponsored by Harvard/MGH under the “O-1 Visa program: Individuals with Extraordinary Ability or Achievement”
- 07/2013-
07/2018 *Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital,*
Harvard/MIT Health Sciences and Technology, Boston, USA
Assistant in Neuroscience
Sponsored by Harvard/MGH under the “J-1 Visa program: Research Scholar”
- 10/2008-
01/2015 *University of Rome Tor Vergata, Rome, IT*
Faculty of Medicine, Medical Physics Section
Assistant Professor in Medical Physics
SSD FIS/07 - Applied Physics
- 07/2013-
07/2015 *Harvard Medical School, Boston, USA*
Visiting Assistant Professor in Radiology
Department of Radiology
Sponsored by Harvard/MGH under the “J-1 Visa program: Research Scholar”
- 09/2012 *Massachusetts Institute of Technology (MIT), Cambridge, USA*
Visiting Scientist
Computational Physiology and Inference Group, Research Laboratory of Electronics
- 10/2011-
01/2015 *University of Rome Tor Vergata, Rome, IT*
Aggregate Professor (Art 1/11, law N. 230/2005), a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015
- 10/2006-
10/2008 *University of Rome Tor Vergata, Rome, IT*
Faculty of Medicine, Medical Physics Section
Research Fellow (art. 51/6, law 27/12/1997, n. 449)
"Structural and statistical modeling of physiological systems"
- 10/2005-
10/2006 *University of Rome Tor Vergata, Rome, IT*
Faculty of Medicine, Medical Physics Section
Research Fellow (art. 51/6, law 27/12/1997, n. 449)
"Neural and Mechanical Interactions between the Cardiocirculatory and Respiratory systems"
- 07/2004-
12/2005 *University of Rome Tor Vergata, Rome, IT*
Faculty of Medicine, Medical Physics Section
Research Collaborator – "Physics of the Cardiorespiratory system"
- 1/1/2000-
1/1/2002 *Max-Planck Institute of Psychiatry, Munich, D*
Postdoctoral research scientist – "Conductive Phenomena Elicited by Transcranial Magnetic Stimulation in Human and Rodent Brain Tissue"

Max-Planck Institute of Psychiatry, Munich, D

1/1/1998- **Postdoctoral research scientist** – "Mathematical Modeling of mRNA-Antisense Interactions *in vitro* and *in vivo*: Applications to Neuroendocrine Correlates of Affective Disorders"
1/1/2000

– **ADDITIONAL WORK EXPERIENCE** –

05/2009 *United Nations Framework Convention for Climate Change (UNFCCC), Bonn, D*
Facilitator, “All Staff Retreat”

02/2002- **Project Coordinator**. Fundraising and liaising with donors. At-a-distance collaboration
01/2004 in projects implemented on the field.

06-07/1997, *Radiotelevisione Italiana (RAI) ("Report")*
11-12/1997 **Journalist/Translator**. Freelance work in *Germany*. Planning and filming of the pieces, organization of contacts, interviews to the public and translations.

1/6/1995- *McKinsey & Co. Düsseldorf, D*
1/9/1995 **Summer Associate**. Work in a client-advising team concerned with theoretical and practical financial issues as well as the evaluation of client-related data

01/06/1990- *European Space Agency (ESA), Frascati (RM), IT*
31/06/1990 **Data Analyst**

– **RESEARCH GRANTS** –

FUNDED

01/06/2021- Italian Health Ministry, Code: SG-2019-12369035
01/06/2024 **Mentor and Key Personnell, Grant EUR 130.000**
"UltraRadio: Boosting the efficacy of radiotherapy in Glioblastoma through ultrasound-aided delivery of theranostic nanoparticles across the blood-brain barrier" (PI: Dr. Allegra Conti, University of Rome Tor Vergata, Rome, IT)

01/01/2021- Italian Association for Cancer Research, Code: MFAG 24636
01/01/2025 **Mentor and Collaborator, Grant EUR 477.739**
"FUSRadio: enhancing radiotherapy in Glioblastoma through focused ultrasound" (PI: Dr. Allegra Conti, University of Rome Tor Vergata, Rome, IT)

01/01/2021- Italian Health Ministry
01/01/2025 **Co-PI, Grant EUR 450.000, Code: RF-2019-12369194**
"Image- and genetically guided personalized neuromodulation therapy for persistent postural-perceptual dizziness" (PI: Dr. Iole Indovina, University of Messina, IT)

01/01/2021- European Commission, Horizon 2020
01/01/2025 **Co-PI and work package leader. Grant EUR 4.446.208**
"EXPERIENCE: The "Extended-Personal Reality": augmented recording and transmission of virtual senses through artificial-Intelligence" (PI: Dr Gaetano Valenza, University of Pisa, PisaIT)

01/01/2021- European Commission, Horizon 2020
01/01/2025 **Key Person/Investigator. Grant EUR 5.999.252.50**
"PLASTICSFATE: understanding of the impact of micro- and nano-plastics (MP/NP) and associated additives/adsorbed contaminants (A/C) in the human body." (PI: Dr Rudolf Reuther, ENAS, DE)

- 01/09/2021- Regional Scientific Research Funding Body, Lazio, Italy
01/09/2023 **Co-PI. Grant EUR 150,000**
Endometrial Notch pathway as a novel target for improving implantation efficiency (PI: Dr. Luisa Campagnolo, University of Rome Tor Vergata, Rome, IT)
- 01/01/2019- Italian Consortium for Supercomputing Application (SCAI - ISCRA)
01/12/2019 **Key Personell Grant: access to supercomputing resources**
"Spiking Neural Network and NeoCortex Evolution" (PI: Dr. Andrea Duggento, University of Rome Tor vergata)
- 01/01/2019- European Commission, Horizon 2020
01/01/2023 **Investigator and Task Leader. Grant EUR 6.783.556**
"NanoinformatiX: designing nanomaterials safe for human health and the natural environment" (PI: Prof Miguel Banares, Spanish National Research Council, Madrid, ES)
- 01/08/2018- National Institutes of Health (NIH), Code: 1P01AT009965-01
31/07/2023 **Key Person/Investigator. Grant USD 2.211.628**
"Boosting Mind-body Mechanisms and Outcomes for Chronic Pain" (PI: Dr. Vitaly Napadow, Harvard/MGH, Boston, USA)
- 01/09/2018- Umberto Veronesi Foundation
01/09/2019 **Investigator: grant: EUR 25.000**
"Breast Osteoblast-like cells in breast cancer: novel mediators, predictive biomarkers and therapeutic targets for bone metastatic disease" (PI: Dr. Manuel Scimeca, University of Rome Tor Vergata, Rome, IT)
- 01/09/2018- Complex Traumatic Brain Injury Rehabilitation Research – Clinical Research Award
31/08/2022 (CTRR – CRA), Department of Defense
Site Principal Investigator. Grant USD 2.000.000
"Advancing Rehabilitation: Physiological, Psychological and Neuroimaging Measures of Factors that Predispose, Promote, and Perpetuate Post-Traumatic Dizziness" (PI: Prof. Jeffrey B. Staab, Mayo Clinic, Rochester, USA)
- 01/01/2018- University of Rome Tor Vergata (Internal funding Mechanism)
01/01/2019 **Co-Principal Investigator. Grant: EUR 35.000**
"CARDIMIRAX: HAX-1 splice variants as potential molecular biomarkers for cardiomyopathies" (PI: Prof. Florence Malisan, University of Rome Tor Vergata, Rome, IT)
- 09/01/2016- National Institutes of Health (NIH), Code: 5R01NS095937
07/31/2021 **Key Person/Investigator.**
"In vivo imaging of spinal brain glial activation in low back patients" (PI: Dr. Marco Loggia, Harvard/MGH, Boston, USA)
- 04/15/2016- National Institutes of Health (NIH), Code: 5R01NS094306
03/31/2022 **Key Person/Investigator.**
"The role of Brain Glial Activation in knee Osteoarthritis" (PI: Dr. Marco Loggia, Harvard/MGH, Boston, USA)
- 08/01/2018- National Institutes of Health (NIH), Code: P01AT009965
07/31/24 **Key Person/Investigator.**
"Boosting mind-body mechanisms for mitigating central sensitization in migraine" (PI: Dr. Vitaly Napadow, Harvard/MGH, Boston, USA)

- 09/28/2016-11/30/2021 National Institutes of Health (NIH), Code: 3OT2OD023867
Key Person/Investigator.
"Mapping the linkage between auricular vagus nerve receptors and cardiovagal modulation" (PI: Dr. Vitaly Napadow, Harvard/MGH, Boston, USA)
- 01/12/2017-31/11/2021 European Commission, Horizon 2020, Code 760928
Investigator. Grant EUR 5.900.354
"BIORIMA: Biomaterial Risk Management" (PI: Prof Lang Tran, Institute of Occupational Medicine, Edinburgh, UK)
- 06/01/2016-02/29/2020 National Institutes of Health (NIH),code: 1K01EB019474-01
Investigator. Grant: USD 701.568
"In vivo atlas of the ascending arousal system in health and traumatic coma". (PI: Dr. Marta Bianciardi, Harvard/MGH, Boston, USA)
- 01/01/2014-01/01/2015 University of Rome Tor Vergata, Grant: "Joint Chairs 2014".
Principal Investigator. Grant: EUR 17.000
"Joint dynamical Heart Rate Variability and resting state fMRI analysis: a new tool to investigate central correlates of ANS dysfunction in Parkinson's Disease" (with Dr Riccardo Barbieri, Harvard/MGH, Boston, USA).
- 24/10/2012-23/10/2016 European Commission, Seventh Framework Programme (FP7)
 COST Action MODENA (Modelling Nanomaterial Toxicity)
Investigator. Grant: EUR 112.700
"Quantitative Nanostructure-Toxicity Relationships (QNTS) modeling and database"
 (PI: Prof Lang Tran, Institute of Occupational Medicine, Edinburgh, UK)
- 12/11/2012-11/11/2016 Italian Ministry of Health, "Ricerca Finalizzata 2010"
Investigator. Grant: EUR 250.000
"Phenotyping COPD patients and assessing disease severity by means of a standardized model" (PI: Dr. Stefano Diciotti, University of Bologna, Bologna, IT)
- 01/10/2014-30/09/2015 Ente Cassa di Risparmio Firenze, code: 2013/7676
Investigator. Grant: EUR 25.000
"Development of an evolved, low-cost technique for phenotyping and stratifying disease severity in COPD patients" (PI Dr. Stefano Diciotti, University of Bologna, Bologna, IT)
- 01/10/2012-01/10/2016 Wellcome Trust, Sir Henry Wellcome Fellowship, code: 21341_061447
Research Sponsor and Investigator. Grant: GBP 250.000
"MIND – Modelling and Imaging using Non-Gaussian Diffusion" (Dr. Silvia de Santis, Cardiff University Brain Research Imaging Centre, Cardiff, UK)
- 01/01/2013-01/07/2015 Massachusetts Institute of Technology (MIT) International Science and Technology Initiatives (MISTI), code: GSF_2012
Co-Principal Investigator. Grant: USD 14.000
"Advanced Neuromonitoring: Data, Algorithms, and Clinical Inference" (with Prof. Thomas Heldt, Massachusetts Institute of Technology, Cambridge, USA)

- 01/12/2010-01/12/2015 Italian Ministry for University and Research (MIUR), FIRB 2008 - "Futuro in Ricerca 2008", code: RBFR08VABD
National Coordinator. Grant: EUR 566.000
"Cardiorespiratory dysregulation in hypertensive cardiomyopathy and chronic obstructive pulmonary disease: a nonlinear signal processing approach to diagnostics, optimizing mechanical ventilation and reducing peri- and postoperative morbidity"
 Additional Support from Third Parties (Industry)
Pulsion Medical Systems®: equipment granted for research purposes (Picco2©, Pulsioflex©): **Estimated Value: EUR 35.000**
- 01/09/2009-01/09/2011 Italian Ministry of Foreign Affairs (MAE), Italian Ministry for University and Research (MIUR)
Investigator. Grant: EUR 71.250
"Physical Techniques in Cardiovascular Diagnostics" (PI: Prof. MG Guerrisi, University of Rome Tor Vergata, Rome, IT)
 (Bilateral scientific and technological cooperation protocols: research projects of wide relevance within the Albania-Italy executive program)
- 01/09/2007-01/09/2009 Italian Ministry of Foreign Affairs (MAE), Italian Ministry for University and Research (MIUR)
Investigator. Grant: EUR 43.600
"Physical Techniques in Cardiovascular Diagnostics" (PI: Prof. MG Guerrisi, University of Rome Tor Vergata, Rome, IT)
 (Bilateral scientific and technological cooperation protocols: research projects of wide relevance within the Albania-Italy executive program)
- 01/01/2009-01/01/2010 University of Rome Tor Vergata, Internal Funding Mechanisms
Principal Investigator. Grant: EUR 846
"Diffusion tensor imaging and the quantification of conductive phenomena elicited in anisotropic brain tissue by Transcranial Magnetic Stimulation"
- 01/01/2009-01/01/2010 University of Rome Tor Vergata, Internal Funding Mechanisms
Investigator. Grant: EUR 930
"Modeling neurovascular interactions"(PI: Prof. MG Guerrisi, University of Rome Tor Vergata, Rome, IT)

UNDER REVIEW

- 2021 Italian Ministry for Research and Education, National Research Programmes (PRIN)
PI, Request: EUR 879.058
myFUS: Novel ultrasound neuromodulation technologies for inducing myelin repair in multiple sclerosis
- 2021 Cancer Research UK, "Cancer Grand Challenges – Macromolecules"
PI, Request: GBP 19,710,000
SOUNDelivery: "drug-and tumor-agnostic, universal intracellular delivery of macromolecules through novel ultrasound technologies"

PAST PROPOSALS

- 2019-2023 Italian Ministry of Finance (MISE). "Progetti di ricerca e sviluppo agevolati secondo la procedura negoziale ai sensi del decreto 24 Maggio 2017"
Co-PI and Work Package Leader
 MATCH: Multidisciplinary Approach to Inhibit Cancer Hike
- 2019-2021 Italian Ministry for University and Research (MIUR), Programma PRIN 2017, code: 2017M9NXJ4.

Principal Investigator and Coordinator

"DOPAMINE: Deciphering the cOmplexity of PArkinson's disease: a Machine INtelligencE approach"

- 02/04/2019-
02/03/2022 National Institutes of Health (NIH): Code: 2018A015897
Key Person/Investigator
"Evaluation of Mechanisms Supporting Respiratory-gated Auricular Vagus Nerve Stimulation Effects on Hypertension" (PI: Ronald Garcia Gomez, Harvard/MGH, Boston, USA)
- 2019-2021 European Commission (Horizon 2020): OC-2018-2-23520
COST Action EUNAD (EUropean Network for Alzheimer's Disease)
Investigator (PI: Prof. Leonardo Palombi, University of Rome Tor Vergata, Rome, IT)
- 2018-2019 Medical Research Council (UK)
Co-Principal Investigator
Refining the construct of resilience and identifying neural markers of resilience in young people. MRC GW4 BioMed Project Proposals (with Prof. Graeme Fairchild, University of Bath, UK)
- 12/11/2012-
11/11/2016 Italian Ministry of Health, "Ricerca Finalizzata 2018".
Investigator and Work Package Leader. Grant: EUR 250.000
"Osteoblast-like cells in breast and prostate cancer: novel mediators, predictive biomarkers and therapeutic targets for bone metastatic disease" (PI: Prof. Orazio Schillaci, University of Rome Tor Vergata, Rome, IT)
- 2019-2020 Italian Cystic Fibrosis Research Foundation
Investigator
Sinopsys Lacrimal Stent: new and innovative method for the administration of sinus topical therapy in Cystic Fibrosis patients with chronic rhinosinusitis (PI: Prof. di Girolamo, University of Rome Tor Vergata, Rome, IT)
- 2019-2023 European Commission (Horizon 2020): MSCA-ITN-2018. H2020-MSCA-ITN-2018
CO-Principal Investigator
iCONNECT - Network to integrate and translate research on Conduct Disorder in female adolescents. Collaborative Training network (21 partners). (PI: Prof Christine Freitag, University of Frankfurt, DE)
- 2018-2019 Swissbridge Foundation Award
Investigator
Uncovering the role of Long-noncoding RNAs in Glioblastoma stem cells metabolism and crosstalk with microenvironment (PI: Dr. Silvia Galardi, University of Rome Tor Vergata, Rome, IT)
- 2018-2022 European Commission and Lazio Region. POR-FESR 2014-2020 Program.
Investigator
BENRIS – Competitive repositioning of small-medium enterprises. (PI: Assing SpA, <https://www.assing.it/en/>)
- 2018-2022 European Commission (Horizon 2020): H2020-FETPROACT-2018-2020, FETPROACT-01-2018.
Co-Principal Investigator
ANTE: Advanced Technologies and Methods for Navigating Elapsed Time and Exploiting the Neurophysio-pathology therein (PI: Dr. Gaetano Valenza, University of Pisa, Pisa, IT)

- 2018-2022 Cancer Research UK's Grand Challenge
Co-Principal Investigator
Osteoblast-like cells (OLCs) in breast and prostate cancer: novel mediators, predictive biomarkers and therapeutic targets for bone metastatic disease (PI: Prof. Elena Bonanno, University of Rome Tor Vergata, Rome IT)
- 2018-2021 World-Wide Cancer Research UK
Investigator
 Characterizing and targeting long-noncoding RNAs in glioblastoma stem-like cells (PI: Prof. Silvia Ciafre', University of Rome Tor Vergata, Rome, IT)
- 2017-2021 Wellcome Trust (UK).
Investigator
 'First in-vivo in-silico investigation of cardiac electro-mechanical coupling in patients with wall-motion abnormalities: From basic physiology to arrhythmia treatment (PI: Michele Orini, University College London, UK)
- 2017-2020 Worldwide Cancer Research (UK):
Co-Principal Investigator
Bone metastases from breast cancer: "Breast Osteoblast-like cells" on the way home (PI: Prof. Elena Bonanno, University of Rome Tor Vergata, Rome IT)
- 2017-2018 University of Rome Tor Vergata (Internal funding Mechanism)
Co-Principal Investigator
GlioStemlncRNA: Long-noncoding RNAs in glioblastoma stem-like cells as biomarkers and targets for therapy (PI: Prof. Silvia Ciafre, University of Rome Tor Vergata, Rome IT)
- 2017-2023 Horizon 2020, Diagnostic Characterization of Rare Diseases (SC1-PM-03-2017)
Investigator
ADVANCING: A multidimensional, high-throughput and integrative approach to improve molecular characterization, diagnostic accuracy and classification of rare movement disorders (PI Angel Carracedo, University of Santiago de Compostela, ES)
- 2017-2021 Horizon 2020: New concepts in patient stratification (SC1-PM-02-2017)
Principal Investigator
DOPAMINE: DiscOvering the dimensions of PArkinson's disease: a big-data systeMs medicINE approach
- 2017-2021 National Institutes of Health (NIH), code: 1R21EB017937-01
Consultant
Novel MRI biomarkers of cerebrovascular and brain parenchymal compliance. (PI: Dr. Marta Bianciardi, Harvard/MGH, Boston, USA)
- 2017-2021 American Heart Association (AHA), code: 14GRNT18850021
Consultant
"Novel MRI biomarkers of cerebrovascular compliance". (PI: Dr. Marta Bianciardi, Harvard/MGH, Boston, USA)
- 2016-2019 Italian Ministry for University and Research (MIUR), Programma PRIN 2015, code: 2015BB4BKT.
Principal Investigator
"DOPAMINE: Deciphering the cOmplexity of PArkinson's disease: a "big-data" Machine INtelligence approach"

- 2015-2017 University of Rome "Tor Vergata", "Consolidate the Foundations" Program
Co-Principal Investigator
"Placenta/Embryo Complex: an in vitro tool for Modeling Nanoparticle systemic toxicity" (with Dr. Antonio Pietroiusti, University of Rome Tor Vergata, Rome, IT)
- 2015-2017 Italian Ministry of Foreign Affairs (MAE), code: PGR03843
Principal Investigator
"Monitoring brain function in critical care"
 (Bilateral scientific and technological cooperation protocols: research projects of wide relevance within the Italy-USA executive program) (with Prof. Thomas Heldt, MIT, Cambridge, USA)
- 2015 John Templeton Foundation, code: 59847
Investigator
"Studying brain development in youths with antisocial behavior to identify new targets for intervention" (with Dr. Luca Passamonti and Dr. Graeme Fairchild, University of Bath, UK)
- 2015 Italian Ministry of Health, Foreign Investigator Grant, code: PE-2013-02356990
Co-Principal Investigator
"Joint dynamical HRV-rsfMRI analysis: a new tool to investigate central correlates of ANS dysfunction in PD and Parkinsonisms" (with Dr. Carlo Tessa and Dr. Riccardo Barbieri, Politecnico di Milano, Milan, IT)
- 2014 Italian Ministry of Foreign Affairs (MAE), code: PGR02507
Investigator
"Nanobarriers: from nanotoxicology to nanomedicine"
 (Bilateral scientific and technological cooperation protocols: research projects of wide relevance within the Italy-Sweden executive program)
- 2014 University of Rome Tor Vergata, "Uncovering Excellence" Program
Principal Investigator
"Modeling nanoparticle embryotoxicity in a novel in vitro system mimicking the placenta/embryo complex"
- 2014 Italian Ministry for University and Research (MIUR), SIR 2014, code: RBSI14YQR4
Investigator
"NonAutonomous Causality in Brain Connectivity: from Health to Neurodegenerative Disorders" (with Dr. Andrea Duggento, University of Rome Tor Vergata, Rome, IT)
- 2014 Italian Ministry for University and Research (MIUR), SIR 2014, code: RBSI14L0L6
Investigator
"How to solve the cost crisis in health care improving quality: a bottom-up computer-aided design, simulation and optimization approach with target applications to the Italian National Health Service" (with Dr. Luca Paulon, University of Rome Tor Vergata, Rome, IT).
- 2014 Italian Ministry for University and Research (MIUR), SIR 2014, code: RBSI14O07F
Investigator
"Cerebral small vessel disease: biological and clinical determinants and mechanisms of progression" (with Dr. Anna Poggesi, University of Florence, Florence, IT).
- 2014 Italian Ministry for University and Research (MIUR), SIR 2014, code: RBSI14W9IM
Investigator

"Impact of low-dose computed tomography on the management of chronic obstructive pulmonary disease patients: an evidence-based study" (with Dr. Nicola Sverzellati, University of Parma, Parma, IT).

- 2014 Italian Ministry for University and Research (MIUR), SIR 2014, code: RBSI14WFBY
Investigator
"Dynamical Integration of Neuro-functional and Autonomic data for Multimodal Outcomes in health and disease" (with Dr. Gaetano Valenza, University of Pisa, Pisa, IT)
- 2015 Horizon 2020 Personalizing health and Care, RIA, 2015-two-stage, code: 667810-1
Coordinator
"DOPAMINE: Deciphering the cOMplexity of PArkinson's disease: a big-data Machine INtelligence approach" (size of Consortium: 10 partners)
- 2014 Foundation "La Marato de TV3", Spain, code 355/C/2014
Investigator
"Quantitative gait analysis in older adults with Alzheimer disease and mild cognitive impairment: pathophysiological aspects, MRI correlates and possible clinical implications"
- 2013 Italian Ministry of Foreign Affairs (MAE), code: PGR01574
Principal Investigator
"Brain complexity and machine-learning: predicting cognitive response to dopaminergic therapy in Parkinson's disease"
(Bilateral scientific and technological cooperation protocols: research projects of wide relevance within the Italy-USA executive program)
- 2013 Italian Ministry of Health, Young Investigator Grants, code: GR-2011-02347207
Investigator
"Cognitive decline, dementia, stroke and bleeding risk: how can we improve the risk stratification in patients with atrial fibrillation?" (with Dr. Stefano Diciotti, University of Florence, Florence, IT)
- 2013 Italian Ministry of Health, Young Investigator Grants, code: GR-2011-02352466
Co-Principal Investigator
"Machine-Learning prediction of individual cognitive and emotional function after dopaminergic therapy in Parkinson's Disease" (with Dr. Luca Passamonti and Dr. Stefano Diciotti, University of Florence, Florence, IT)
- 2012 Italian Ministry for University and Research (MIUR), FIRB "Futuro in Ricerca" 2012, code: RBFR12TQ7Y.
Principal Investigator
"Complexity, neurodegeneration and dementia: a massively computational, multimodal machine learning approach to understanding Parkinson's and Alzheimer's Disease" (with Dr. Luca Passamonti and Dr. Stefano Diciotti, University of Florence, Florence, IT)
- 2012 Italian Ministry for University and Research (MIUR), PRIN 2012, code: 2012KRYPPWW.
Principal Investigator
"Brain complexity and multimodal machine-learning in Parkinson's Disease: a massively parallel computing approach to predicting cognitive and emotional drug response." (with Dr. Luca Passamonti, Italian National Research Council, Milan, IT).

2009 Italian Ministry for University and Research (MIUR), PRIN 2009, code: 2009PN5JWR.
Co-Principal Investigator
"Nonlinear dynamics and time-variant approaches to EEG and EKG analysis: novel investigative and diagnostic tools in epilepsy and neuromediated syncope" (with Prof. Pietro Cortelli, Dr. Giandomenico Nollo, Universities of Bologna and Trento, IT).

– SCHOLARSHIPS AND OTHER FUNDING –

2013-2014 *University of Rome Tor Vergata, Rome, IT*
Exchange Professorship Grant (CoPI: Prof. Riccardo Barbieri, Department of Anaesthesia, Harvard Medical School)

2001 *National Research Council (CNR), IT*
Full bursary for research activity at institutions abroad (2000-2002), (Published with n. 203.04.22 on 14-06-2000), duration: 12 months (Ranked first nation-wide). (Unclaimed due to overlap with postdoctoral fellowship)

1998 *Engineering and Physical Sciences Research Council (EPSRC), UK*
Ph.D. Scholarship, Applied Mathematics, Imperial College London, UK: "The Unique Determination of Brain Currents using Magnetoencephalography" (Unclaimed due to overlap with postdoctoral fellowship)

1998 *Engineering and Physical Sciences Research Council (EPSRC), UK*
Postgraduate Scholarship "CASE" (12 months). Imperial College London, UK (Unclaimed due to overlap with postdoctoral fellowship)

1996 *St. Catherine's College, Oxford University, Oxford, UK*
Postgraduate Scholarship "Leatherseller's Scholarship" for outstanding academic achievements

– PH.D., POSTDOC AND RESEARCH FELLOW SUPERVISION –

March 2021-present *University of Rome Tor Vergata, Rome, IT*
Modeling of physiological systems and bioactivity of nanomaterials in a biological environment
 (Dr. Silvia Minosse, **Postdoctoral Research Scientist**)

2019-present *University of Rome Tor Vergata, Rome, IT*
"Developing novel brain biomarkers through noninvasive imaging in humans and in animal models"
 (Dr. Allegra Conti, **Postdoctoral Research Scientist**)

2016-2019 *University of Rome Tor Vergata, Rome, IT*
Co-Supervisor
Ph.D. Program in "Medical Biotechnologies and Translational Medicine"
 (Silvia Minosse, **Ph.D. Student**)

2016-2019 *University of Rome Tor Vergata, Rome, IT*
Scientific Supervisor
 Public Selection for the recruitment of 1 research fellow according to art. 24, par 3, letter a) law 30/12/2010, n. 240 - S.C. 02/D1 – SSD FIS/07 (DR. n. 2096 on 11.10.2016). Project: "SMART Campus (facility for collection of biological samples) and development of methodologies for estimating the impact of thermoelectric power generation on public health" (Dr. Andrea Duggento, **Research fellow**)

- 2014-2016 *University of Rome Tor Vergata, Rome, IT*
 “Signal- and image-based biomarkers for risk quantification and prediction of disease evolution” (Dr. Simona Lanzafame, **Postdoctoral Research Scientist**).
- 2013-2016 *University of Rome Tor Vergata, Rome, IT*
Ph.D. Program in "Medical Biotechnologies and Translational Medicine"
 (Stefano Ciulli, **Ph.D. Student**)
- 2012-2014 *University of Rome Tor Vergata, Rome, IT*
 “Experimental application of Magnetic Resonance Imaging in evaluating demyelination within a study targeted to evaluating the potential effect of approved drug treatments on myelinated fibers” (Dr. Simona Lanzafame, **Research Bursar**)
- 2010-2016 *University of Rome Tor Vergata, Rome, IT*
 "Advanced Signal Processing in Cardiovascular and Neuroimaging Applications" (Dr. Andrea Duggento, **Postdoctoral Research Scientist**)

JOINT SUPERVISION UNDER COLLABORATIVE AGREEMENTS

- 2018-present *University of Bath, Department of Psychology*
*Using machine learning to redefine the constructs of resilience in adolescent conduct disorder (MS Marlene Staginnus, **PhD Candidate**)*
- 2018-present *University of Bath, Department of Psychology*
*Using machine learning to redefine the constructs of resilience in adolescent conduct disorder (Ms Hayley Lowther, Ms Harriet Cornwell, **PhD Candidates**)*
- 2018-present *University of Cambridge, Computer Laboratory, Cambridge, UK*
*"Graph attention networks for brain connectivity". (Mr Tiago Azevedo, **PhD Candidate**)*
- 2016-present *University of Cambridge, Computer Laboratory, Cambridge, UK*
*"Deep learning-based discrimination of MCI-AD converters". (Mr Simeon Spasov, **PhD Candidate**)*
- 2016-2017 *University of Southampton, UK*
*"Neuroimaging analysis Techniques for linking subcortical volumetry with blood-based biomarkers". (Ms Karen Gonzales, **PhD Candidate**)*
- 2016-2017 *University of Southampton, UK*
*"Permutation-based inference in structural connectivity". (Ms Nuria Mackes, **PhD Candidate**)*
- 2015-2016 *University of Southampton, UK*
*"Advanced Brain Morphometry for the study of sex differences in Conduct Disorder" (Ms Areti Smaragdi, **PhD Candidate**)*
- 2014-2017 *University of Catanzaro, IT*
*"Dynamical Connectivity estimates through nonstationary volatility models". (Dr. Roberta Riccelli, **PhD Candidate** and, successively, **PostDoctoral Research Fellow**)*
- 2014-2016 *University of Pisa, IT*
"Integration of nonlinear signal processing techniques with MR image analysis"

Dr. Gaetano Valenza (Postdoctoral Research Fellow)

–SCIENTIFIC SOCIETIES AND INITIATIVES –

- 2020-
present
2018-
present
2017-
present
- Member:** Italian Association for Artificial Intelligence (AIIA)
- Member:** Italian Professional association of Chemists and Physicists (no. 3654)
- Member:** Technical Committee on Cardiopulmonary Systems. IEEE Engineering in Medicine and Biology Society (EMBS)
- 2017-
present
2013-
present
2014-
present
- Member:** Alzheimer Precision Medicine Initiative (APMI)
- Member:** International Society for Magnetic Resonance in Medicine (ISMRM)
- Member:** IEEE Engineering in Medicine and Biology Society (EMBS). **Elected Senior Member in 2017**
- 2015-
present
2015-
present
- Member:** Italian Society for Physics (SIF)
- Member:** Italian Association for Medical Physics (AIFM)

– INVITED PRESENTATIONS –

- 09/2019
- Invited Presentation.** “High gradient diffusion MRI: models for *in vivo* microstructural mapping in multiple sclerosis”. XLVIII National GIDRM Congress on Magnetic Resonance, L’Aquila, IT
- 05/2019
- Invited Presentation.** “Semi-supervised convolutional neural networks and graph attention networks in neuroscience: multidomain data integration and prediction of neurodegenerative disease evolution”. GIDRM Workshop on “*Integration of NMR and MRI with other techniques in Brain Imaging*”, Chieti, IT
- 10/2018
- Invited Presentation.** “Novel contrasts and technologies in diagnostic neuroimaging”. ICFDT5 - 5th International Conference on Frontier in Diagnostic Technologies, National Institute for Nuclear Physics (INFN-LNF), Frascati (RM), IT
- 09/2018
- Invited Presentation.** “Reconstructing conductive phenomena induced in heterogeneous brain tissue by Transcranial Magnetic Stimulation (TMS)”. 104th National Congress of the Italian Physical Society (SIF), Arcavacata di Rende, IT
- 2016
- Invited Presentation.** "Nonlinear dynamics and complexity in health and disease: a biomedical signal processing perspective". *Dipartimento di Ingegneria dell'Energia Elettrica e dell'Informazione "Guglielmo Marconi"*, University of Bologna, Bologna (IT).
- 2016
- Invited Presentation.** "Causal brain correlates of autonomic nervous system (ANS) outflow: a 7T study". *International Conference on Biological Oscillations (ESGCO)*, Lancaster, UK
- 2015
- Invited Presentation.** "Causal brain correlates of autonomic nervous system outflow", *37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Milan, Italy

- 2012 **Invited Presentation.** "Quantifying Uncertainty in Transcranial Magnetic Stimulation", *Research Laboratory of Electronics, Massachusetts Institute of Technology (MIT)*, Boston, USA
- 2011 **Invited Presentation.** "Real-time integrated data collection and processing during major surgery", *4th Annual International Conference in Computational Surgery and Dual Training, Harvard Medical School*, Boston, USA
- 2011 **Invited Presentation.** "Diffusion tensor imaging through orthogonal tensor invariants and generalized differential operators", *XCVII National Congress of the Italian Physical Society (SIF)*, L'Aquila, IT
- 2011 **Invited Presentation.** "Intra- and inter-beat modeling of cardiovascular dynamics and control: assessing haemodynamic stability and responsiveness", *33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Boston, USA
- 2010 **Invited Presentation.** "Data integration and collection during major surgery: challenges and opportunities", *Division of cardiac anaesthesia research, Beth Israel Deaconess Medical Center/Harvard Medical School*, Boston, USA
- 2010 **Invited Presentation.** "Effect of algorithm selection on inference and diagnostic accuracy in Diffusion Tensor Imaging". *Computational Biomedical Imaging Laboratory, Department of Clinical Physiopathology, University of Florence*, Florence, IT
- 2009 **Invited Presentation.** "Monitoring and Modelling Haemodynamics in an Intraoperative setting", *Pulsion Medical Systems*, Munich, D

– CONFERENCE ORGANIZATION –

- 2020 **Conference Chair:** The Promises and Dark Sides of Artificial Intelligence in MRI, NMR and Neuroscience (400+ attendees)
- 2020 **Organization of Invited Symposium and co-chair:** "Low Intensity Focused Ultrasound: engineering developments and therapeutic applications". *42nd Annual International Conferences of the IEEE Engineering in Medicine and Biology*, Montreal, CA
- 2019 **Conference Co-chair:** "11th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO)", Pisa, IT (150+ attendees)
- 2019 **Session chair.** "Brain Imaging and Image Analysis (I)", *41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society* Berlin, DE
- 2019 **Session chair.** "Brain Imaging and Image Analysis (II)", *41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Berlin, DE
- 2019 **Session chair.** "Image Analysis and Classification - Machine Learning Approaches (II)", *41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Berlin, DE
- 2019 **Session chair.** "Connectivity and Causality", *41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Berlin, DE

- 2016 **Session chair.** “Diffusion Tensor Imaging”, *38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Orlando, Florida
- 2014 **Session chair,** "Baroreflex Analysis".
8th Conference of the European Study Group on Cardiovascular Oscillations (ESGCO), Trento, IT
- 2011 **Organization of Invited Session and co-chair.** "Cardiovascular Signal Processing and Modeling: Intraoperative Haemodynamic Monitoring", *33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, Boston, USA,

–EDITORIAL ACTIVITIES–

- 2016-present **Member of Editorial Board** of the following Journals: *Computer Methods and Programs in Biomedicine, Austin Neurology, Journal of Neurology, Neurosurgery and Spine, Medical Case Reports and Images, Journal of Case Reports, Biomedicine and Prevention, Journal of Neurological Disorders and Stroke, The Scientific Pages of Artificial Intelligence, PLOS one, United Journal of Biomedical Engineering and Sciences, Neuroscience, Hygiene, Global Cardiology and Cardiovascular Research, Brain Sciences*
- 2018-present **Guest Associate Editor,** *Frontiers in Brain Imaging Methods; Frontiers in Computational Neuroscience; Frontiers in Medical Physics and Imaging; Frontiers in Brain Imaging Methods*
- 2018-present **Review Editor,** *Frontiers in Emotion Regulation and Processing*
- 2019-present **Associate Editor,** *Frontiers in Networks in the cardiovascular system*
- 2020 *Biomedical Signal Processing and control*
Guest Editor, Special Issue: “*Biomedical signal processing and modelling for cardiovascular oscillations*”
- 2020 *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*
Guest Editor, Theme Issue “*Advanced Computation in Cardiovascular Physiology: New Challenges and Opportunities*”
- 2019 *Seminars in Cancer Biology*
Guest Editor, Special Issue “*Precision Medicine in Breast Cancer: from Biological Imaging to Artificial Intelligence*”
- 2019 *Frontiers in Physics; Physiology; Molecular Biosciences; Computational Neuroscience; Neuroinformatics; Neurorobotics; Systems Neuroscience*
Guest Editor, Research Topic “*Synchronization, Swarming and Emergent Behaviors in Complex Networks and Neuroscience*”
- 2019 *Frontiers in Physics*
Guest Editor, Research Topic “*Magnetic Resonance Guided Focused Ultrasound: Physical Principles and Biomedical Applications*”
- 2019 *Frontiers in Neuroscience; Neurology; Psychiatry; Neuroimaging and Stimulation*
Guest Editor, Research Topic “*Advanced PET, SPECT, MR and Optical Imaging in Clinical and Pre-Clinical Research of Neuropsychiatric Disorders*”

- 2021 *Environmental Research and Public Health*
Guest Editor, Special Issue "Micro (and Nano) Plastics and the 1000 Days: What Impact on Maternal and Child Health"
- 2019 *Computational and Mathematical Methods in Medicine*
Guest Editor, Special Issue "Deep Learning as a Gateway to Predictive, Preventive, Personalized, and Participatory Medicine"
- 2018 *Contrast media and Molecular Imaging*
Guest Editor, Special Issue "Imaging Diagnostic and Pathology in the Management of Oncological-Patients"
- 2018 *Contrast media and Molecular Imaging*
Guest Editor, Special Issue "Molecular Imaging for Basic Science and Personalized and Intelligent Medicine"
- 2016-present (yearly) **Associate Editor, Theme 2: Biomedical Imaging & Image Processing**, Annual International Conference of the IEEE Engineering in Medicine and Biology Society,
- 2015 *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*
Guest Editor, Theme Issue "Uncovering brain-heart information through advanced signal and image processing"
- 2013 *Journal of Clinical Monitoring and Computing*
Guest Editor, Special Issue "Tracking hemodynamic and cardiovascular function during surgery"
- 2012 *The Scientific World Journal*
Guest Editor, Special Issue "Diffusion MRI in Neurodegenerative Disorders"
- 2008-present **Peer Reviewer for the following scientific journals:**, *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology, Annals of Neurology, BMJ Innovations, Clinical Autonomic Neuroscience, Computer Methods and Programs in Biomedicine Conference, Entropy, Epilepsy Research, International Conference of the IEEE Engineering in Medicine and Biology Society, International Conferences on Biomedical and Health Informatics, International Journal of Psychophysiology, Journal of Clinical Psychiatry, Journal of Mechanics in Medicine and Biology, Journal of Neuroscience Methods, Journal of Psychiatric Research, Journal of the American Academy of Child & Adolescent Psychiatry, Journal of the Neurological Sciences, Journal of Translational Medicine, Medical Physics, NeuroImage, NeuroImage: Clinical, Neuropsychologia, Neuroscience, Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences, Physica Medica, Plos One, Psychiatry Research: Neuroimaging, Scientific Reports, Transactions in Biomedical Engineering, Magnetic Resonance in Medicine, Computational Intelligence and Neuroscience, nature communications,*

-APPOINTMENTS AND PANELS-

SCIENTIFIC APPOINTMENTS

- 2014-present *University of Rome Tor Vergata, Rome, IT*
Medical Physics Section, Department of Biomedicine and Prevention
Head of Laboratory, "Parallel Computing in Life Sciences"

- 2014-present *University of Rome Tor Vergata, Rome, IT*
Medical Physics Section, Department of Biomedicine and Prevention
Co- Head of Laboratory, "Electronics and Computer Science"
- 2014-present *University of Rome Tor Vergata, Rome, IT*
Department of Biomedicine and Prevention
Member of Laboratory for simulation and optimization of the National Health System
- 2013 *European Study Group on Cardiovascular Oscillations (ESGCO), Trento, IT*
Member of Scientific Committee
- 2021-present *University of Rome "Campus Biomedico", Rome, IT*
Member of Ph.D Supervisor Panel, "National Phd in Artificial Intelligence" Cycles: 37
- 2013-present *University of Rome Tor Vergata, Rome, IT*
Member of restricted Ph.D Supervisor Panel, Ph.D in "Medical Biotechnologies and Translational Medicine" Cycles: 29-36
- 2011-present *University of Rome Tor Vergata, Rome, IT*
Member of Ph.D Supervisor Panel, Ph.D in "Medical Biotechnologies and Translational Medicine" Cycles: 29-36

- RECRUITING AND ADMISSIONS PANELS -

- 2021 *Saint Camillus International University of Health Sciences, Rome, IT*
Panel Member
Public Selection for the recruitment of 1 research fellow according to art. 24, par 3, letter b) law 30/12/2010, n. 240 - S.C. 02/D1 – SSD FIS/07 (DR. 44 on 19/04/2021)
- 2020 *University of Bologna, Bologna IT*
Panel Member for the competitive award of one tenured assistant professor according to art. 24, par 3, letter b) law 30/12/2010, n. 240 - S.C. 02/D1 – SSD FIS/07, DD n. 613/2020 on 19/05/2020
- 2020 *University of Chieti, Chieti, IT*
Panel Member for the competitive award of one research fellow according to art. 24, par 3, letter b) law 30/12/2010, n. 240 - S.C. 02/D1 – SSD FIS/07, DR. 1886/2019 on 27/09/2019
- 2019 *University of Chieti, Chieti, IT*
Panel Member for the competitive award of one research fellow according to art. 24, par 3, letter b) law 30/12/2010, n. 240 - S.C. 02/D1 – SSD FIS/07, DR. 1886/2019 on 27/09/2019
- 2019 *University of Rome Tor Vergata, Rome, IT*
Panel Member for the competitive award of one postdoctoral fellowship within the research project: "Novel signal- and image-based biomarkers for risk quantification and prediction of disease evolution", SSD FIS/07, DR n. 2671/2019 on 07/11/2019
- 2018 *Saint Camillus International University of Health Sciences, Rome, IT*
Panel Member
Public Selection for the recruitment of 1 research fellow according to art. 24, par 3, letter b) law 30/12/2010, n. 240 - S.C. 02/D1 – SSD FIS/07 (DR. 18 on 23/07/2018)

- 2016 *University of Rome Tor Vergata, Rome, IT*
Panel Member for the competitive award of 1 (one) research bursaries/studentships:
"Development of physical and computational methodologies applied to imaging for characterizing networks in neuroscience", SSD FIS/07, DR n. 2120 on 13/10/2016
- 2014 *University of Rome Tor Vergata, Rome, IT*
Panel Member for the competitive award of one postdoctoral fellowship within the research project: *"Novel signal- and image-based biomarkers for risk quantification and prediction of disease evolution"*, SSD FIS/07, DR n. 469/2014 on 19/02/2014
- 2012 *University of Rome Tor Vergata, Rome, IT*
Panel Member for the competitive award of 3 (three) research bursaries/studentships:
"Experimental application of Magnetic Resonance Imaging in evaluating demyelination within a study targeted to evaluating the potential effect of approved drug treatments on myelinated fibers", D.R. n. 2318 on 1/8/2012
- 2012 *University of Rome Tor Vergata, Rome, IT*
Panel Member for the competitive award of one postdoctoral fellowship within the research project: *"Advanced Signal Processing in Cardiovascular and Neuroimaging Applications"*, SSD FIS/07, DR N. 2374 on 2/8/2012
- 2010 *University of Rome Tor Vergata, Rome, IT*
Panel Member for the competitive award of one postdoctoral fellowship within the research project: *"Advanced Signal Processing in Cardiovascular and Neuroimaging Applications"* SSD FIS/07, DR N. 2937 on 2/8/2010
- 2010-present *University of Rome Tor Vergata, Rome, IT*
Panel Member, Admissions Panel, School of Specialization in Medical/Health Physics, a.y. 2010-2011, 2011-2012, 2012-2013, 2013-2014

SCIENTIFIC EVALUATION PANELS

- 2021 *Medical research Council UK*
Grant Proposal Evaluator
Neurosciences and Mental Health Board
- 2020 *Italian Association for Physics (SIF)*
Panel Member for the competitive national conference awards
- 2020 *German Ministry of Education and Research*
Grant Proposal Evaluator
"Translation Projects in Personalised Medicine"
- 2020 *German Ministry of Education and Research*
Grant Proposal Evaluator
JPND call 2020 "Novel Imaging and Brain Stimulation Methods and Technologies Related to Neurodegenerative Diseases"
- 2019 *41st Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), Berlin, DE*
Panel Member, Student Paper Competition
- 2019 *National Science Center Poland*
Grant Proposal Evaluator
- 2019 *French National Research Agency (ANR)*
Grant Proposal Evaluator

Section: CE14 - Physiologie et physiopathologie

- 2019 *Alzheimer's Research UK*
Grant Proposal Evaluator
 PRELUDIUM funding scheme, NZ5 panel.
- 2018 *Italian National Research Quality Evaluation Program (VQR)*
Research Output Evaluator
Disciplinary Sector FIS/07 (Applied Physics)
- 2018 *European Commission, Horizon 2020 - ERA-Net ERA PerMed*
Expert Advisor, *Drafting of calls for proposals*
Module 2B for Research area 2 "Data and ICT-Towards application in health care".
- 2018 *The Netherlands Organisation for Scientific Research*
Grant Proposal Evaluator
Innovational Research Incentives Scheme (Do.Vi.Ci Program)
- 2018 *Italian Ministry of University and Research (MIUR)*
Member of Research Consultation *for the Italian Ministry of University of Research aimed to redefining the aims of European research funding mechanisms (9th Framework Programme - FP9)*
- 2018 *Regional grant proposal evaluation mechanism [region Sardinia (Italy)]*
Grant Proposal Evaluator
- 2015-present *REPRISE (Register of Expert Peer Reviewers for Italian Scientific Evaluation)*
Member and National Grant Proposal Evaluator
- 2013-present *University of Rome Tor Vergata, Rome, IT*
Department of Biomedicine and Prevention
Member of Research Panel for Scientific Standards
- 2011-present *University of Rome Tor Vergata, Rome, IT*
School of Specialization in Medical/Health Physics
Member of Executive Committee, Member of Award Committee

OTHER APPOINTMENTS

- 1996 *St. Catherine's College, Oxford University, Oxford, UK*
Information Technology (IT) Officer (Computer Representative)
- 1995 *Imperial College of Science, Technology and Medicine, University of London, UK*
Treasurer, "Italian Society"

— AWARDS AND ACHIEVEMENTS—

- 2019 Italian Chapter of ISMRM, Milan, Italy, (2019)
 Best poster award (Senior Author)
- 2016 *VII Congresso della Associazione Italiana di Risonanza Magnetica in Medicina (AIRMM - ISMRM italian Chapter), Bologna, IT*
Best paper selection award ("A Volterra-Wiener decomposition approach to estimating directed functional brain networks").

- 2015 *Annual meeting of the International Society for Magnetic Resonance in Medicine, Toronto, Canada.*
Best paper selection award ("Causal brain correlates of autonomic nervous system outflow").
- 2015 *Scuola di Specializzazione in Fisica Medica, Università degli Studi di Roma Tor Vergata, Rome, IT*
Supervisor to Winner of Best Dissertation Award. ("Distribution-aware model estimation and uncertainty propagation in the presence of non-Gaussian noise: applications to Diffusion-weighted MRI" - Candidato: Dr. Andrea Duggento)
- 2014 *XIX International Conference on Mechanics in Medicine and Biology, Bologna, Italy.*
Best paper selection award ("Merging inter-beat models with intra-beat haemodynamics to investigate stability and responsiveness of the cardiovascular system").
- 2014 *VIII Congress of the Italian Association for Medical Physics (AIFM), Torino, Italy.*
Supervisor to Winner of Student Award: ("Assessing model uncertainty as a function of acquisition parameters in Diffusion Tensor Imaging") - Dr. Andrea Duggento
- 2011 *4th International Congress on Transcranial and Direct Current Stimulation*
Winner: "Best Poster Award"
- 2007 *European Federation of Organizations for Medical Physics*
Winner: "Highlights of the First European Conference on Medical Physics". Contribution published in "*Physica Medica - European Journal of Medical Physics*"
- 1996 *Middle Common Room, St. Catherine's College, Oxford University, Oxford, UK*
Member of Middle Common Room
- 1995 *Royal College of Science, London, UK*
Associate of the Royal College of Science (ARCS, 1st Class Honours).
- 1990- 1992 *Münchener Ausbildungszentrums für Saxophon*
Diploma "Theorie und Praxis der Jazz-Improvisation" (Instrument: alto sax)" grade: 1 (highest grade)
- 1988 –1992 *INPDAl, Rome, IT*
Yearly scholarship for rewarding academic performance (1988-1992).

- MEDIA EXPOSURE —

The following recent publications have received world wide media interest and exposure:

- Riccelli R, **Toschi N**, Nigro S, Terracciano A, Passamonti L (2017). *Surface-Based Morphometry reveals the Neuro-Anatomical basis of the Five-Factor Model of Personality. Social Cognitive and Affective Neuroscience.* doi: 10.1093/scan/nsw175

<https://www.altmetric.com/details/15839125>

144 News Outlets, 99th percentile attention score, #1 out of 1128 from this source

- Fairchild G, **Toschi N**, Sully K, Sonuga-Barke EJ, Hagan CC, Diciotti S, Goodyer IM, Calder AJ, and Passamonti L (2016). *Mapping the structural organization of the brain in conduct*

disorder: replication of findings in two independent samples. Journal of child psychology and psychiatry, and allied disciplines. doi: 10.1111/jcpp.12581.

<https://wiley.altmetric.com/details/8775743>

78 News Outlets, 99th percentile attention score, #2 out of 1713 from this source

TEACHING (HIGHER EDUCATION)

– CERTIFIED PROFESSIONAL TRAINING COURSES ("ECM") –

- 0220 *University of Palermo, Palermo, Italy*
"Methods and Techniques in Magnetic Resonance Imaging"
- 2012 *University Hospital "Careggi", Florence, IT, Italian Association for Medical Physics (AIFM), International Society for Magnetic Resonance in Medicine (ISMRM Italy)*
"Physical methodologies for advanced applications of Magnetic Resonance"
- 2012 *University of Bologna, Bologna, IT*
Italian Association for the Study of the Neurovegetative System (AINV)
"Applications and limits of the study of heart rate variability"
- 2011 *University of Torino, Torino, IT*
Italian Association for Medical Physics (AIFM)
"Monothematic course on non-ionizing radiation"

– INTEGRATED COURSE COORDINATION –

- 2008- *University of Rome Tor Vergata, Rome, IT*
Faculty of Medicine
- **Degree Course in Medicine and Surgery (English language)**
 Coordinator, Integrated Course "Physics and Statistics" a.y. 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
 - **Degree Course in Dental Hygiene**
 Coordinator, Integrated Course "Propedeutic Sciences", a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
 - **Degree Course in Audioprosthesis Techniques**
 Coordinator, Integrated Course "Physics and Statistics", a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
 - **Degree Course in Medical Radiology for Imaging and Radiotherapy**
 Coordinator, Integrated Course "Mathematics, Physics, Statistics, Informatics", a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
 - **Degree Course in Neuro/ and Psychomotor Therapy in Childhood**
 Coordinator, Integrated Course "Physics, Statistics and Informatics", a.y. 2008/2009, 2009/2010, 2010/2011
 - **Degree Course in Psychiatric Rehabilitation**
 Coordinator, Integrated Course "Physics, Statistics and Informatics", a.y. 2008/2009, 2009/2010, 2010/2011

– UNIVERSITY LECTURE COURSES –

- 2005- *University of Rome Tor Vergata, Rome, IT*
present Faculty of Medicine
- **Degree Course in Medicine and Surgery**

Module: "Electromagnetism" (within Integrated Course: "Physics and Statistics"), a.y. 2011/2012, 2012/2013

- **Degree Course in Medicine and Surgery (English language)**
 Course: "Physics" (within Integrated Course: "Physics and Statistics"), a.y. 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
 Course: "Informatics" (within Integrated Course: "Physics and Statistics"), a.y. 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **Degree Course in Dentistry**
 Modules: "Fundamentals of Medical Physics I", "Fundamentals of Medical Physics II" (2,5 credits within course "Medical Physics"), a.y. 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **School of Specialization in Medical/Health Physics**
 Courses: "Analysis and Modeling of Physiological Systems II" (a.y. 2005/2006, 2006/2007 – contract professor, 2007/2008, 2008/2009 –staff), "Medical Physics I" (a.y. 2009/2010), "Medical Physics Laboratory" (a.y. 2009/2010, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021)
- **Schools of Specialization Hygiene and Public Health, Nuclear Medicine, Radiodiagnostics, Radiotherapy, Orthodontics, Anaesthesiology** (from a.y. 2016/2017), Ematology (from a.y. 2019/2020)
 Member of Teaching Committee (a.y. 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019)
- **Degree Course in Dental Hygiene**
 Course: "Physics Applied to Medicine", a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **Degree Course in Orthopedic Techniques**
 Course: "Physics", a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **Degree Course in Audioprosthesis Techniques**
 Course: "Physics", a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **Degree Course in Medical Radiology for Imaging and Radiotherapy**
 Course: "Physics". Coordinator: Integrated Course in Mathematics, Physics, Statistics and Informatics / a.y. 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **Degree Course in Neuro/ and Psychomotor Therapy in Childhood**
 Course: "Applied Physics", a.y. 2008/2009, 2009/2010, 2010/2011
- **Degree Course in Psychiatric Rehabilitation**
 Course: "Applied Physics", a.y. 2008/2009, 2009/2010, 2010/2011
- **Degree Course in Sport Sciences**
 Course: "Applied Physics" (module), a.y. 2010/2011, 2011/2012, 2012/2013
- **Degree Course in Orthoptics and Ophthalmological Assistance**
 Course: "Applied Physics" (module), a.y. 2009/2010, 2010/2011, 2011/2012, 2012/2013
- **Degree Course in Diagnostics in Neurophysiopathology**
 Course: "Applied Physics" (module), a.y. 2010/2011, 2011/2012
- **Degree Course in Sports Sciences and Techniques**
 Course: "Applied Physics", a.a. 2015/2016

University "Our Lady of Good Counsel", Tirana, AL

Faculty of Medicine (framework convention for joint higher education degree programs with the University of Rome Tor Vergata)

- **School of Specialization in Anaesthesiology**
Course: "Physics for Anaesthesiologists" / a.y. 2019/2020, 2020/2021
- **Degree Course in Medicine and Surgery**
Course: "Applied Physics" / a.y. 2005/2006, 2006/2007, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021
- **Degree Course in Dentistry**
Course: "Medical Physics" / a.y. 2005/2006, 2006/2007, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2015/2016, 2016/2017, 2017/2018, 2018/2019, 2019/2020, 2020/2021

– RECITATIONS –

2005-
present University of Rome Tor Vergata, Rome, IT
Faculty of Medicine

- **Degree Course in Medicine and Surgery**
Course: "Applied Physics"
(a.y. 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011)
- **Degree Course in Sport Sciences**
Course: "Applied Physics"
(a.y. 2006/2007, 2007/2008, 2008/2009, 2009/2010)

1998-
2002 Max-Planck Institut für Psychiatrie, Munich, D

- **Teaching Laboratory Assistant.** Course: "Neurobiologie der Reproduktion"

– UNIVERSITY TUTORING ACTIVITY –

2005-
2008 University of Rome Tor Vergata, Rome, IT, Faculty of Medicine

- **School of Specialization in Neurophysiopathology.** Tutor (special topics), course: "Applied Physics" (a.y. 2004/2005, 2005/2006, 2006/2007, 2007/2008).
Tutored Assignments: "Principles of Electroencephalography and Magnetoencephalography – Physics of Measuring Cerebral Currents", "Physical Principles and Practical Aspects of Electroencephalography", "Physical Principles of Electromyography", "Physical Principles of Magnetic Resonance Imaging".
- **School of Specialization in Oncology.** Tutor, course: "Medical Biophysics" (a.y. 2007/2008).
- **School of Specialization in Cardiology.** Tutor, course: "Physics" (a.y. 2007/2008).
- **Degree Course in Diagnostics in Neurophysiopathology.** Tutor course: "Applied Physics" (a.y. 2005/2006, 2006/2007).

– UNIVERSITY THESIS SUPERVISION –

2020 **Member of Reading Committee**, School of Specialization in Medical/Health Physics, University of Rome Tor Vergata,
(Student: Dr. Agnese Barbareschi)

2019 **Thesis Advisor**, Degree Course in Medical Radiology for Imaging and Radiotherapy, University of Rome Tor Vergata, "A structural brain connectivity analysis in primary open

- angle glaucoma patients through probabilistic multi-shell tarctography*" (Student: Francesco di Cio')
- 2016 **Thesis Advisor**, School of Specialization in Medical/Health Physics, University of Rome Tor Vergata, "*Characterization of Gaussian and non Gaussian models for diffusion weighted MRI signals and application to the study of central visual pathways*" (Student: Dr. Simona Lanzafame)
- 2016 **Thesis Advisor**, School of Specialization in Medical/Health Physics, University of Rome Tor Vergata, "*Physical Characterization of a Hybrid PET/CT TOF-4D Scanner and applications in moderd radiation oncology*" (Student: Dr. Ilaria Bonetti)
- 2016 **Member of Reading Committee**, School of Specialization in Medical/Health Physics, University of Rome Tor Vergata, "*Myocardial tissue characterization through quantitative MR imaging: clinical application of relaxometry and diffusion*" (Student: Dr. Eleonora Belligotti)
- 2016 **Thesis Advisor**, Degree Course in Medical Radiology for Imaging and Radiotherapy, University of Rome Tor Vergata, "*Echo-planar imaging in multi-shell diffusional kurtosis imaging (DKI): technical optimization and clinical applications*" (Student: Dario Martinez)
- 2016 **Thesis Advisor**, Degree Course in Medical Radiology for Imaging and Radiotherapy, University of Rome Tor Vergata, "*New applications of ultra-high field susceptibility weighted imaging (SWI): fractal analysis of agiogenesi in multiform glioblastoma*" (Student: Viola Roni)
- 2016 **Thesis Advisor**, Degree Course in Medical Radiology for Imaging and Radiotherapy, University of Rome Tor Vergata, "*Advanced MRI applications through adiabatic gradients*" (Student: Domenico Luongo)
- 2015 **Thesis Advisor**, Degree course in Medicine and Surgery, University of Rome Tor Vergata, "*Psychogenic non-epileptic seizures: a study of autonomic changes through analysis of heart rate variability parameters*" (Student: Vincenzo Mastrangelo).
- 2015 **Thesis Advisor**, School of Specialization in Neurology, University of Rome Tor Vergata, "*Autonomic correlates of psychogenic non-epileptic seizures: a heart rate variability study*" (Student: Dr. Giada Ricciardo Rizzo).
- 2015 **Thesis Advisor**, School of Specialization in Medical/Health Physics, "*Distribution-aware model estimation and uncertainty propagation in the presence of non-Gaussian noise: applications to Diffusion-weighted MRI*", (Student: Dr. Andrea Duggento).
- 2015 **Member of Reading Committee**, School of Specialization in Medical/Health Physics, "*Development and implementation of novel tools in intraoperative radiation therapy*" (Student. Dr. Alessia Ciccotelli).
- 2015 **Member of Reading Committee**, School of Specialization in Medical/Health Physics, "*A prospective risk study in external beam radiation therapy*" (Student. Dr. Adele Rinaldi).
- 2014 **Thesis Advisor**, Degree Course in Electronic Engineering, Faculty of Engineering, University of Florence, "*Effects of physiological noise correction on resting-state fMRI regional homogeneity estimation*" (Student: Stefano Orsolini).
- 2013 **Thesis Advisor**, Degree Course in Diagnostics in Neurophysiopathology, "*Heart rate variability analysis in de-novo, drug-free temporal lobe epilepsy*" (Student: Lucia de Montis).
- 2013 **Member of Reading Committee**, School of Specialization in Medical/Health Physics, "*Variation of physical characteristics and average dose to the parotid gland in head/neck tumor patients undergoing IMRT*" (Student: Nicola Pace).
- 2012 **Thesis Advisor**, Degree Course in Electronic Engineering, Faculty of Engineering, University of Florence, "*Functional cerebral connectivity in MR: measuring integration, segregation and centrality*" (Student: Marco da Campo).

- 2011 **Thesis Advisor**, School of Specialization in Anesthesiology and Intensive Care, University of Rome Tor Vergata (Student: Dr. Florencia della Badia Giussi).
- 2011 **Thesis Advisor**, Degree Course in Diagnostics in Neurophysiopathology "*Alteration of Autonomic Nervous Systems in focal Epilepsy: a heart rate variability analysis*" (Student: Emanuela Tucci).

LANGUAGES

<i>Italian</i>	Native
<i>German</i>	Native
<i>English</i>	Fluent/Native
<i>French</i>	Good

BRIEF RESEARCH SUMMARY

I have an interdisciplinary background in physics, mathematics as well as neuroscience and cardiovascular science. I focus primarily on the development of mechanistic, statistical, and intelligent models for understanding physiological phenomena, advanced image generation and processing, modelling of neuronal activity, nanoparticle physics and bioactivity, time-frequency approaches for quantifying autonomic activity and the development of software/hardware interfaces for real-time biomedical data acquisition in an intraoperative setting. I also have a strong focus on MR physics and ultra-high field human MR imaging. I regularly serve as a senior biostatistician, AI and machine learning and parallel computing consultant in fundamental biological/biomarker research (genetic, epigenetic, imaging) as well as image acquisition and processing. I am the author or co-author of approximately 200 peer-reviewed publications in these fields, which have been cited around 5000 times since year 2000.

- COLLABORATIONS -

International Collaborations:

- Martinos Center for Biomedical Imaging, Harvard-MIT Health Sciences and Technology (HTS) Institute and Massachusetts General Hospital, Boston, US (Dr. M Bianciardi, Dr. Vitaly Napadow, Dr. Caterina Mainero)
- Computer Laboratory, University of Cambridge, UK (Prof. Pietro Lio')
- Department of Anesthesia, Massachusetts General Hospital, Boston, US (Prof. R Barbieri)
- Massachusetts Institute of Technology (MIT), Computational Physiology and Clinical Inference Group, Cambridge, US (Prof. T Heldt, Prof. G Verghese)
- School of Computer Science and Electronic Engineering, University of Essex, UK (Dr. Luca Citi, Prof. Riccardo Poli)
- CUBRIC (Cardiff University's Brain Research Imaging Centre), Cardiff, UK (Dr. Silvia de Santis)
- Bernstein Center for Computational Neuroscience Göttingen, Göttingen, D (Dr. M Sommer)
- Center for Alzheimer Research, Université Pierre et Marie CURIE, La Sorbonne, Paris, France (Dr. S Lista, Prof. H Hampel)
- Université Pierre et Marie CURIE, La Sorbonne, Paris, France (Dr. S Lista, Prof. H Hampel)
- Center for Neuroscience Zurich, University of Zurich, CH (Dr. ME Keck)
- Department of Clinical Neurosciences, University of Cambridge, UK (Dr. Luca Passamonti)
- Department of Psychology, University of Southampton, UK (Dr. Graeme Fairchild)
- Department of Psychiatry, University of Rostock, Rostock, D (Prof. S Teipel)
- Max-Planck Institute of Psychiatry, Munich, D (Prof. R Landgraf)
- University of Tirana (Medical Physics), Tirana, AL (Prof. T Karaja)

National Collaborations outside of home institution:

- Consiglio Nazionale delle Ricerche (CNR), Istituto di Scienze Neurologiche (Dr. L Passamonti)
- Dipartimento di Scienze Teoriche ed Applicate, Università dell'Insubria (Dr. Ester Papa)
- Dipartimento di Ingegneria dell'Energia Elettrica e dell'Informazione «Guglielmo Marconi», Università di Bologna, Bologna, IT (Dr. Stefano Diciotti, Prof. Lorenzo Chiari)
- Azienda Ospedaliero-Universitaria Pisana, UOC Fisica Sanitaria, Pisa, IT (Dr. M Giannelli)
- Dipartimento di Scienze Neurologiche, Università di Bologna, Bologna, IT (Dr. G Calandra Bonauro, Prof. P Cortelli)
- Istituto di Cardiologia, Università di Bologna, Bologna, IT (Dr. I Corazza, Prof. R Zannoli)
- Politecnico di Milano, Ingegneria Biomedica, Milano, IT (Dr. M Ferrario, Dr. F Aletti, Prof. G Baselli, Prof. S Cerutti, Dr. M Ferrario, Dr. F Aletti)
- Università degli Studi di Roma "La Sapienza", Dipartimento di Neurologia e Psichiatria, Roma, IT (Dr. A Conte, Prof. A Berardelli, Dr. F Caramia)

- PUBLICATIONS -

<https://www.scopus.com/authid/detail.uri?authorId=6602297547>
<https://scholar.google.it/citations?user=kyI6AJ8AAAAJ&hl=en&oi=ao>

Total Impact factor: 350.2, H-Index: 32/40, Citations: 4655/6410 (Scopus/ Google Scholar)

PAPERS PUBLISHED IN PEER-REVIEWED JOURNALS

1. Terracciano A, Aschwanden D, Passamonti L, Toschi N, Stephan Y, Luchetti M, Lee JH, Sesker A, O'Súilleabháin PS, Sutin AR (2021). *Is neuroticism differentially associated with risk of alzheimer's disease, vascular dementia, and frontotemporal dementia?* Journal of Psychiatric Research 138,34-40, doi: 10.1016/j.jpsychires.2021.03.039
2. Minosse S, Garaci F, Martino F, Di Mauro R, Melis M, Di Giuliano F, Picchi E, Floris R, Guerrisi M, Di Girolamo S, Toschi N (2021). *Global and local brain connectivity changes associated with sudden unilateral sensorineural hearing loss.* NMR in biomedicine doi: 10.1002/nbm.4544 (Epub ahead of print)
3. Minosse S, Picchi E, Di Giuliano F, Sarmati L, Teti E, Pistolesse CA, Lanzafame S, Di Ciò F, Guerrisi M, Andreoni M, Floris R, Toschi N, Garaci F. *Functional brain network reorganization in HIV infection.* J Neuroimaging. 2021 doi: 10.1111/jon.12861 (Epub ahead of print)
4. Terracciano A, Aschwanden D, Stephan Y, Cerasa A, Passamonti L, Toschi N, Sutin AR (2021). *Neuroticism and risk of parkinson's disease: A meta-analysis.* Movement Disorders, doi: 10.1002/mds.28575
5. López-Ortiz S, Pinto-Fraga J, Valenzuela PL, Martín-Hernández J, Seisdedos MM, García-López O, Toschi N, Di Giuliano F, Garaci F, Mercuri NB, Nisticò R, Emanuele E, Lista S, Lucia A, Santos-Lozano A (2021). *Physical exercise and alzheimer's disease: Effects on pathophysiological molecular pathways of the disease.* International Journal of Molecular Sciences 22(6),1-29, doi: 10.3390/ijms22062897
6. Toschi N, Passamonti L, Bellesi M (2021). *Sleep quality relates to emotional reactivity via intracortical myelination.* Sleep 44(1), doi: 10.1093/sleep/zsaa146
7. Torrado-Carvajal A, Toschi N, Albrecht DS, Chang K, Akeju O, Kim M, Edwards RR, Zhang Y, Hooker JM, Duggento A, Kalpathy-Cramer J, Napadow V, Loggia ML (2021). *Thalamic neuroinflammation as a reproducible and discriminating signature for chronic low back pain.* Pain 162(4),1241-1249, doi: 10.1097/j.pain.0000000000002108
8. Matteucci C, Minutolo A, Balestrieri E, Petrone V, Fanelli M, Malagnino V, Ianetta M, Giovinazzo A, Barreca F, Di Cesare S, De Marco P, Miele MT, Toschi N, Mastino A, Sinibaldi Vallebona P, Bernardini S, Rogliani P, Sarmati L, Andreoni M, Grelli S, Garaci E (2021). *Thymosin alpha 1 mitigates cytokine storm in blood cells from coronavirus disease 2019 patients.* Open Forum Infectious Diseases 8(1), doi: 10.1093/ofid/ofaa588
9. Manghisi VM, Fiorentino M, Boccaccio A, Gattullo M, Cascella GL, Toschi N, Pietroiusti A, Uva AE (2020). *A body tracking-based low-cost solution for monitoring workers' hygiene best practices during pandemics.* Sensors (Switzerland) 20(21),1-17, doi: 10.3390/s20216149
10. Martucci A, Cesareo M, Toschi N, Garaci F, Bagetta G, Nucci C (2020). *Brain networks reorganization and functional disability in glaucoma.* Progress in Brain Research. Bagetta G and Nucci C, Elsevier B.V. **257**: 65-76.
11. Pietroiusti A, Uva AE, Cascella GL, Toschi N (2020). *Covid-19: Contact and gesture monitoring using proud technology.* Occupational Medicine 70(5),330-334, doi: 10.1093/occmed/kqaa083
12. Duggento A, Conti A, Mauriello A, Guerrisi M, Toschi N (2020). *Deep computational pathology in breast cancer.* Seminars in Cancer Biology, doi: 10.1016/j.semcancer.2020.08.006
13. Tiano F, Amati F, Cherubini F, Morini E, Vancheri C, Maletta S, Fortuni S, Serio D, Quatrana A, Luffarelli R, Benini M, Alfedì G, Panarello L, Rufini A, Toschi N, Frontali M, Romano S, Marcotulli C, Casali C, Gioiosa S, Mariotti C, Mongelli A, Fichera M, Condò I, Novelli G, Testi R, Malisan F (2020). *Frataxin deficiency in friedreich's ataxia is associated with reduced levels of hax-1, a regulator of cardiomyocyte death and survival.* Human Molecular Genetics 29(3),471-482, doi: 10.1093/hmg/ddz306
14. Romigi A, Ricciardo Rizzo G, Izzi F, Guerrisi M, Caccamo M, Testa F, Centonze D, Mercuri NB, Toschi N (2020). *Heart rate variability parameters during psychogenic non-epileptic seizures: Comparison between patients with pure pnes and comorbid epilepsy.* Frontiers in Neurology 11, doi: 10.3389/fneur.2020.00713
15. Conti A, Kamimura HAS, Novell A, Duggento A, Toschi N (2020). *Magnetic resonance methods for focused ultrasound-induced blood-brain barrier opening.* Frontiers in Physics 8, doi: 10.3389/fphy.2020.547674

16. Toschi N, Gisbert RA, Passamonti L, Canals S, De Santis S (2020). *Multishell diffusion imaging reveals sex-specific trajectories of early white matter degeneration in normal aging*. Neurobiology of Aging 86,191-200, doi: 10.1016/j.neurobiolaging.2019.11.014
17. Filip AC, Azevedo T, Passamonti L, Toschi N, Lio P (2020). *A novel graph attention network architecture for modeling multimodal brain connectivity*, Institute of Electrical and Electronics Engineers Inc.
18. Hampel H, Caraci F, Cuello AC, Caruso G, Nisticò R, Corbo M, Baldacci F, Toschi N, Garaci F, Chiesa PA, Verdooner SR, Akman-Anderson L, Hernández F, Ávila J, Emanuele E, Valenzuela PL, Lucía A, Watling M, Imbimbo BP, Vergallo A, Lista S, Alzheimer Precision Medicine I (2020). *A path toward precision medicine for neuroinflammatory mechanisms in alzheimer's disease*. Frontiers in Immunology 11, doi: 10.3389/fimmu.2020.00456
19. Conti A, Duggento A, Indovina I, Guerrisi M, Toschi N (2020). *Radiomics in breast cancer classification and prediction*. Seminars in Cancer Biology, doi: 10.1016/j.semcancer.2020.04.002
20. Di Ciò F, Garaci F, Minosse S, Passamonti L, Martucci A, Lanzafame S, Di Giuliano F, Picchi E, Cesareo M, Guerrisi MG, Floris R, Nucci C, Toschi N (2020). *Reorganization of the structural connectome in primary open angle glaucoma*. NeuroImage: Clinical 28, doi: 10.1016/j.nicl.2020.102419
21. Vavla M, D'Angelo MG, Arrigoni F, Toschi N, Peruzzo D, Gandossini S, Russo A, Diella E, Tirelli S, Salati R, Scarpazza P, Luffarelli R, Fortuni S, Rufini A, Condò I, Testi R, Martinuzzi A (2020). *Safety and efficacy of interferon γ in friedreich's ataxia*. Movement Disorders 35(2),370-371, doi: 10.1002/mds.27979
22. Vavla M, Arrigoni F, Toschi N, Peruzzo D, D'Angelo MG, Gandossini S, Russo A, Diella E, Tirelli S, Salati R, Rufini A, Condo I, Testi R, Martinuzzi A (2020). *Sensitivity of neuroimaging indicators in monitoring the effects of interferon gamma treatment in friedreich's ataxia*. Frontiers in Neuroscience 14, doi: 10.3389/fnins.2020.00872
23. Indovina I, Bosco G, Riccelli R, Maffei V, Lacquaniti F, Passamonti L, Toschi N (2020). *Structural connectome and connectivity lateralization of the multimodal vestibular cortical network*. NeuroImage 222, doi: 10.1016/j.neuroimage.2020.117247
24. Kamimura HAS, Conti A, Toschi N, Konofagou EE (2020). *Ultrasound neuromodulation: Mechanisms and the potential of multimodal stimulation for neuronal function assessment*. Frontiers in Physics 8,1-9, doi: 10.3389/fphy.2020.00150
25. Valenza G, Passamonti L, Duggento A, Toschi N, Barbieri R (2020). *Uncovering complex central autonomic networks at rest: A functional magnetic resonance imaging study on complex cardiovascular oscillations*. Journal of the Royal Society Interface 17(164), doi: 10.1098/rsif.2019.0878
26. González-Madruga K, Rogers J, Toschi N, Riccelli R, Smaragdi A, Puzzo I, Clanton R, Andersson J, Baumann S, Kohls G, Raschle N, Fehlbaum L, Menks W, Stadler C, Konrad K, Freitag CM, De Brito SA, Sonuga-Barke E, Fairchild G (2020). *White matter microstructure of the extended limbic system in male and female youth with conduct disorder*. Psychological Medicine 50(1),58-67, doi: 10.1017/S0033291718003951
27. Duggento A, Aiello M, Cavaliere C, Cascella GL, Cascella D, Conte G, Guerrisi M, Toschi N (2019). *An ad hoc random initialization deep neural network architecture for discriminating malignant breast cancer lesions in mammographic images*. Contrast Media and Molecular Imaging 2019, doi: 10.1155/2019/5982834
28. De Santis S, Granberg T, Ouellette R, Treaba CA, Herranz E, Fan Q, Mainero C, Toschi N (2019). *Evidence of early microstructural white matter abnormalities in multiple sclerosis from multi-shell diffusion mri*. NeuroImage: Clinical 22, doi: 10.1016/j.nicl.2019.101699
29. Duggento A, Valenza G, Passamonti L, Nigro S, Bianco MG, Guerrisi M, Barbieri R, Toschi N (2019). *A parsimonious granger causality formulation for capturing arbitrarily long multivariate associations*. Entropy 21(7), doi: 10.3390/e21070629
30. Conti A, Duggento A, Guerrisi M, Passamonti L, Indovina I, Toschi N (2019). *Variability and reproducibility of directed and undirected functional mri connectomes in the human brain*. Entropy 21(7), doi: 10.3390/e21070661
31. Passamonti L, Riccelli R, Indovina I, Duggento A, Terracciano A, Toschi N (2019). *Time-resolved connectome of the five-factor model of personality*. Scientific Reports 9(1), doi: 10.1038/s41598-019-51469-2
32. Bonanno E, Toschi N, Bombonati A, Muto P, Schillaci O (2019). *Imaging diagnostic and pathology in the management of oncological-patients*. Contrast Media and Molecular Imaging 2019, doi: 10.1155/2019/2513680
33. Indovina I, Conti A, Lacquaniti F, Staab JP, Passamonti L, Toschi N (2019). *Lower functional connectivity in vestibular-limbic networks in individuals with subclinical agoraphobia*. Frontiers in Neurology 10(AUG), doi: 10.3389/fneur.2019.00874
34. Scimeca M, Anemona L, Granaglia A, Bonfiglio R, Urbano N, Toschi N, Santeusano G, Schiaroli S, Mauriello S, Tancredi V, Schillaci O, Bonanno E, Mauriello A (2019). *Plaque calcification is driven by different mechanisms of mineralization associated with specific cardiovascular risk factors*. Nutrition, Metabolism and Cardiovascular Diseases 29(12),1330-1336, doi: 10.1016/j.numecd.2019.08.009
35. Minosse S, Garaci F, Martucci A, Lanzafame S, Giuliano FD, Picchi E, Cesareo M, Mancino R, Guerrisi M,

- Pistolese CA, Floris R, Nucci C, Toschi N (2019). *Primary open angle glaucoma is associated with functional brain network reorganization*. Frontiers in Neurology 10(OCT), doi: 10.3389/fneur.2019.01134
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 38. Toschi N, Passamonti L (2019). *Intra-cortical myelin mediates personality differences*. Journal of Personality 87(4),889-902, doi: 10.1111/jopy.12442
 39. Valenza G, Sclocco R, Duggento A, Passamonti L, Napadow V, Barbieri R, Toschi N (2019). *The central autonomic network at rest: Uncovering functional mri correlates of time-varying autonomic outflow*. NeuroImage 197,383-390, doi: 10.1016/j.neuroimage.2019.04.075
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 43. Schillaci O, Scimeca M, Toschi N, Bonfiglio R, Urbano N, Bonanno E (2019). *Combining diagnostic imaging and pathology for improving diagnosis and prognosis of cancer*. Contrast Media and Molecular Imaging 2019, doi: 10.1155/2019/9429761
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 45. Mascalchi M, Salvadori E, Toschi N, Giannelli M, Orsolini S, Ciulli S, Ginestroni A, Poggesi A, Giorgio A, Lorenzini F, Pasi M, De Stefano N, Pantoni L, Inzitari D, Diciotti S, for the V-Tsg (2019). *Dti-derived indexes of brain wm correlate with cognitive performance in vascular mci and small-vessel disease. A tbss study*. Brain Imaging and Behavior 13(3),594-602, doi: 10.1007/s11682-018-9873-5
 46. Toschi N, Lista S, Baldacci F, Cavedo E, Zetterberg H, Blennow K, Kilimann I, Teipel SJ, Melo dos Santos A, Epelbaum S, Lamari F, Genthon R, Habert MO, Dubois B, Floris R, Garaci F, Vergallo A, Hampel H, Bakardjian H, Benali H, Bertin H, Bonheur J, Boukadida L, Boukerrou N, Chiesa P, Colliot O, Dubois M, Gagliardi G, Houot M, Kas A, Levy M, Metzinger C, Mochel F, Nyasse F, Poisson C, Potier MC, Revillon M, Santos A, Andrade KS, Sole M, Surtee M, Thiebaut de Schotten M, Younsi N, the I-psg, Alzheimer Precision Medicine I (2019). *Biomarker-guided clustering of alzheimer's disease clinical syndromes*. Neurobiology of Aging 83,42-53, doi: 10.1016/j.neurobiolaging.2019.08.032
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- Anesthesiologica 85(1),93-94, doi: 10.23736/S0375-9393.18.13117-8
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PEER-REVIEWED CONGRESS CONTRIBUTIONS

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300. Toschi N, Lista S, Baldacci F, Vergallo A, Zetterberg H, Blennow K, Kilimann I, Teipel SJ, Cavado E, Antonio Melo dos Santos A, Lamari F, Genthon R, Dubois B, Floris R, Garaci F, Hampel H (2018). *Innovative Biomarker-Guided Diagnostic System from Preclinical to Alzheimer's Disease Dementia.* Alzheimer's Association International Conference, Chicago, USA
301. Vergallo A, Sosata-Bun R, Toschi N, Lista S, Baldacci F, Blennow K, Zetterberg H, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Lamari F, Bruno Dubois, Floris R, Garaci F, and Hampel H (2018). *Association of CSF Alpha-Synuclein and Tau Concentrations with Amyloid Mean Cortical Standard Uptake Value Ratios in Preclinical Subjective Memory Complainers Stratified By Alzheimer's Disease Biomarkers.* Alzheimer's Association International Conference, Chicago, USA
302. Hampel H, Toschi N, Baldacci F, Zetterberg H, Blennow K, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Lamari F, Genthon R, Dubois B, Floris R, Garaci F, Lista S, (2018). *Novel Alzheimer's Disease Biomarker-Guided Diagnostic Workflow Using the Added Value of Six Combined Cerebrospinal Fluid Candidates: A β 1-42, Total-Tau, Phosphorylated-Tau, NFL, Neurogranin, and YKL-40.* Alzheimer's Association International Conference, Chicago, USA
303. Picchi E, Garaci FG, Toschi N, Manenti G, Marziali S, Di Giuliano F, Sarmati L, Andreoni M, Floris R (2017) *Correlation between Diffusion Kurtosis (DK) imaging and biochemical markers in HIV patients.* Annual Meeting of the radiological Society of North America (RSNA) Chicago, USA
304. Picchi E, Garaci FG, Toschi N, Manenti G, Marziali S, Di Giuliano F, Sarmati L, Andreoni M, Floris R (2017). *Magnetic Resonance evaluation of cerebral cortical thickness in HIV patients and correlation with biochemical markers.* Annual Meeting of the radiological Society of North America (RSNA) Chicago, USA
305. Maletta S, Cherubini F, Fortuni S, Tiano F, Rufini A, Toschi N, Condò I, Ussia GP, Frontali M, Romano S, Marcotulli C, Casali, Chillemi G, Novelli G, Testi R, Malisan F, Amati F. (2017). *HAX-1 is a potential molecular biomarker for an early diagnosis of cardiomyopathies in Friedreich's Ataxia.* 20th Meeting of the Italian Society for Human Genetics, Napoli, IT
306. Cherubini F, Fortuni S, Maletta S, Tiano F, Rufini A, Toschi N, Condò I, Ussia GP, Novelli G, Testi R, Amati F, Malisan F (2017). *HAX-1 is a potential molecular biomarker for cardiomyopathies in Friedreich's Ataxia.* International Ataxia Research Conference, Genova, IT
307. Kettner NW, Garcia RG, Polimeni JR, Isenburg K, Toschi N, Barbieri R, Napadow V (2017). *The brainstem response to respiratory-gated auricular vagal afferent nerve stimulation (RAVANS) at ultrahigh-field (7T) fMRI and its effect on vagal autonomic .* 47th annual meeting of the Society for Neuroscience, Washington DC, USA
308. Bianciardi M, Strong C, Toschi N, Edlow BL, Fischl B, Brown EN, Rosen BR, Wald LL (2017). *A probabilistic stereotaxic structural atlas of five mesopontine tegmental nuclei from in vivo 7 Tesla MRI.* 47th annual meeting of the Society for Neuroscience, Washington DC, USA
309. Toschi N, Lista S, Baldacci F, Blennow K, Henrik Zetterberg, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Lamari F, Bruno Dubois, Floris R, Garaci F, and Harald Hampel (2017). *Unbiased Biomarker-Based Categorization of a Multicenter Cohort of ADD, MCI and Ftd Patients.* Alzheimer's Association International Conference, London, UK
310. Lista S, Toschi N, Baldacci F, Blennow K, Henrik Zetterberg, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Stéphane Epelbaum, Lamari F, Bruno Dubois, Robert Nisticò, Floris R, Garaci F, and Harald Hampel (2017). *Two-Level Diagnostic Classification Using Cerebrospinal Fluid Neurogranin in Alzheimer's Disease.* Alzheimer's Association International Conference, London, UK
311. Bun R, Baldacci F, Toschi N, Lista S, Cavado E, Blennow K, Henrik Zetterberg, Floris R, Garaci F, Bonuccelli U, Lamari F, Marie-Odile Habert, Bruno Dubois, Harald Hampel, and INSIGHT-pre AD study group (2017). *Prediction Performance of Alpha-Synuclein Protein in Preclinical Subjective Memory Complainers Stratified By AD Biomarkers: The Insight-Pre AD Study.* Alzheimer's Association International Conference, London, UK
312. Baldacci F, Toschi N, Lista S, Blennow K, Henrik Zetterberg, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Epelbaum S, Lamari F, Dubois B, Floris R, Garaci F, Bonuccelli U, Hampel HH (2017). *Diagnostic Performance Using CSF YKL-0 in Alzheimer's Disease and Frontotemporal Dementia.* Alzheimer's Association International Conference, London, UK
313. Lista S, Toschi N, Baldacci F, Blennow K, Zetterberg H, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Epelbaum S, Lamari F, Dubois B, Floris R, Garaci F, Hampel HH (2017). *Diagnostic Accuracy of CSF Neurofilament Light Chain Protein in the Unbiased Biomarker-Guided Classification System for Alzheimer's Disease.* Alzheimer's Association International Conference, London, UK

314. Hampel HH, Toschi N, Baldacci F, Blennow K, Zetterberg H, Kilimann I, Teipel SJ, Cavado E, Melo dos Santos A, Epelbaum S, Lamari F, Dubois B, Floris R, Garaci F, Lista S (2017). *Diagnostic Accuracy of CSF β -, p-Tau, t-Tau, Neurofilament Light Chain, Neurogranin, YKL-0 Combined Biomarkers in a Multicenter Cohort of Cognitively Impaired Patients*. Alzheimer's Association International Conference, London, UK
315. Baldacci F, Toschi N, Lista S, Cavado E, Blennow K, Zetterberg H, Floris R, Garaci F, Bonuccelli U, Lamari F, Habert MO, Dubois B; Hampel HH and the INSIGHT-preAD Study Group (2017). *Association of Plasma Neurofilament Light Chain Protein with Brain Amyloid Status in a Preclinical Cohort of Subjective Memory Complainers: The Insight-Pre AD Study*. Alzheimer's Association International Conference, London, UK
316. Riccelli R, Passamonti L, Duggento A, Guerrisi M, Indovina I, Toschi N (2017). *Multivariate autoregressive modeling of dynamic inter-network connectivity in the human brain* 7th annual Meeting of the Italian ISMRM chapter. Gaeta, Italy.
317. Duggento A, Passamonti L, Guerrisi M, Toschi N (2017). *Simultaneous estimation of the in-mean and in-variance causal connectomes of the human brain (2017)*. 7th annual Meeting of the Italian ISMRM chapter. Gaeta, Italy.
318. A. Duggento, L. Passamonti, M. Guerrisi, G. Valenza, R. Barbieri, N. Toschi (2017). *Estimating directed brain-brain and brain-heart connectivity through globally conditioned Granger causality approaches*. 7th annual Meeting of the Italian ISMRM chapter. Gaeta, Italy.
319. Riccelli R, Passamonti L, Duggento A, Guerrisi M, Indovina I, Toschi N (2017). *Dynamical Brain Connectivity Estimation using GARCH models: an application to personality neuroscience*. 7th annual Meeting of the Italian ISMRM chapter. Gaeta, Italy.
320. Riccelli R, Smaragdi A, Gonzalez K, Cornwell H, Puzzo I, De Brito S, Clanton R, Baker R, Rogers J, Passamonti L, Toschi N, Fairchild G (2016). *Mapping the structural organization of the brain in female adolescents with Conduct Disorder*. 5th biennial congress of the European Association for Forensic Child and Adolescent Psychiatry, Psychology and other involved Professions, Porto, Portugal
321. Duggento A, Valenza G, Passamonti L, Guerrisi M, Barbieri R, Toschi N (2016). *Orthogonal Laguerre Polynomials and Granger Causality in fMRI*. Fifth Biennial Conference on Resting State and Brain Connectivity. Vienna, Austria
322. Lista S, Toschi N, Garaci F, Blennow K, Zetterberg H, Teipel S, Lamari F, Dubois B, Hampel H. *Added diagnostic value of cerebrospinal fluid neurofilament light chain protein in the classification of prodromal and Alzheimer's disease dementia* Alzheimer's Association International Conference, Toronto, Canada
323. Hampel H, Toschi N, Garaci F, Blennow K, Zetterberg H, Teipel S, Lamari F, Dubois B, Lista S (2016). *Combined added value of cerebrospinal fluid neurogranin and neurofilament light chain protein in the diagnosis of prodromal and Alzheimer's disease dementia*. Alzheimer's Association International Conference, Toronto, Canada
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325. Duggento A, Bianciardi M, Passamonti L, Guerrisi M, Toschi N (2016). *Between-network multivariate causality: a new approach to understanding resting state fMRI connectivity*. 7th annual Meeting of the Italian ISMRM chapter. Bologna, Italy.
326. Giannelli M, Toschi N. *On the use of trace-weighted images in body diffusional kurtosis imaging*. 7th annual Meeting of the Italian ISMRM chapter. Bologna, Italy.
327. Duggento A, Valenza G, Passamonti L, Guerrisi M, Barbieri R, Toschi N (2015). *A Volterra-Wiener decomposition approach to estimating directed functional brain networks*. 7th annual Meeting of the Italian ISMRM chapter. Bologna, Italy.
328. Fairchild G, Sully K, Darekar A, Passamonti L, Sonuga-Barke E, Toschi N (2016). *The familial basis of changes in brain structure in adolescents with Conduct Disorder and their unaffected first-degree relatives*. 5th Congress of the European association for Forensic Child and Adolescent Psychiatry, Porto, Portugal.
329. Duggento A, Valenza G, Bianciardi M, Passamonti L, Wald LL, Guerrisi M, Barbieri R, Toschi N. *Directed Functional Connectivity through Laguerre Basis Functions: from Synthetic Simulations to Ultra High Field Applications*. Ultra High Field MRI: Technological Advances and Clinical Applications, Heidelberg, Germany.
330. Bianciardi M, Toschi N, Eichner C, Polimeni JR, Setsompop K, Brown EN, Hamalainen MS, Rosen BR, Wald LL (2016). *In vivo functional connectome of human brainstem nuclei by high spatial resolution 7 Tesla fMRI*. 22nd Annual Meeting of the Organization for Human Brain Mapping, Geneva, Switzerland.
331. Duggento A, Valenza G, Passamonti L, Guerrisi M, Barbieri R, Toschi N. *Laguerre Polynomials and Granger Causality: a New Approach to Directed Functional Connectivity*. 22nd Annual Meeting of the Organization for Human Brain Mapping, Geneva, Switzerland.

332. Duggento A, Bianciardi M, Wald LL, Passamonti L, Guerrisi M, Barbieri R, Toschi N (2015). *Causal brain correlates of autonomic nervous system (ANS) outflow: a 7T study*. 6th annual Meeting of the Italian ISMRM chapter. Verona, Italy.
333. Duggento A, Guerrisi M, Passamonti L, Toschi N. *Globally conditioned multivariate causal influence estimates in whole brain connectivity*. 6th annual Meeting of the Italian ISMRM chapter. Verona, Italy.
334. M. Marrale, G. Collura, C. Gagliardo, M. Midiri, Toschi N, Brai M. *Development of a software for the characterization of non-gaussian water diffusion using Diffusion Kurtosis Imaging (DKI)*. 6th annual Meeting of the Italian ISMRM chapter. Verona, Italy.
335. Duggento A, Guerrisi M, M. Giannelli, Toschi N. *Simultaneous inference of model parameters and b-value specific noise properties in diffusional kurtosis imaging*. 6th annual Meeting of the Italian ISMRM chapter. Verona, Italy
336. Duggento A, Guerrisi M, C. Tessa, M. Giannelli, Toschi N. *Large-scale optimization of acquisition parameters in diffusion tensor imaging through noise-aware tensor estimation and massively parallel simulations*. 6th annual Meeting of the Italian ISMRM chapter. Verona, Italy
337. Lanzafame S, Guerrisi M, Garaci F, Floris R, Giannelli M, Toschi N. *Model-based differences in estimates of diffusion tensor invariants: diffusion tensor imaging (DTI) vs. diffusional kurtosis imaging (DKI)*. 6th annual Meeting of the Italian ISMRM chapter. Verona, Italy.
338. Toschi N, Kim J, Sclocco R, Duggento A, Barbieri R, Kuo B, Napadow V (2016). *Motion sickness increases functional connectivity between visual motion and nausea-associated brain regions*. Digestive Disease Week, San Diego, USA..
339. Toschi N, Campagnolo L, Duggento A, Guerrisi M, Magrini A, Pietroiusti A (2015). *Forecasting nanoparticle toxicity using nonlinear predictive classifiers*. European conference on computational nanotoxicology (CompNanoTox). Malaga, Spain.
340. Marini S, Diciotti S, Poggesi A, Salvadori E, Ciolli L, Del Bene A, Pasi M, Valenti R, Nannucci S, Pescini F, Ginestroni A, Toschi N, Mascalchi M, Inzitari D, Frisoni G, Pantoni L (2015). *Comparison of visual rating and computational automated analysis of neuroimaging biomarkers and their correlation with cognitive performances in patients with mild cognitive impairment of vascular and degenerative origin. Data from the V-MCI Tuscany and the PharmaCog studies*. XLVI Congress of the Italian Society for Neurology, Genova, Italy.
341. Duggento A, Bianciardi M, Wald LL., Passamonti L, Guerrisi M, Barbieri R, Toschi N (2015). *Causal network characterization in brain and autonomic nervous system (ANS) outflow: a 7 T study*. 101st National Congress of the Italian Physical Society, Rome, Italy.
342. Scimeca M, Toschi N, Antonacci C, Pistolese CA, Giannini E, Scarano L, and Bonanno E. *EDX microanalysis of breast cancers: elemental and phenotypic characterization and relationship to radiodensity of microcalcifications*. National Pathology Congress (SIAPeC), Florence, Italy.
343. Bianciardi M, Toschi N, Eichner C, Sestompop K, Beissner F, Napadow V, Polimeni JR, Wald L (2014). *In Vivo Delineation of Human Brainstem Grey Matter with Diffusion Tensor Imaging at 7 Tesla*. Fourth Biennial Conference on Resting State / Brain Connectivity, Boston, USA.
344. Bianciardi M, Toschi N, Eichner C, Sestompop K, Beissner F, Napadow V, Polimeni JR, Wald L (2014). *In Vivo Delineation of Human Brainstem Grey Matter with Diffusion Tensor Imaging at 7 Tesla*. Annual Meeting of the Society for Neuroscience, Washington DC, USA.
345. Scimeca M, Toschi N, Antonacci C, Pistolese CA, Giannini E, Scarano L, Bonanno E (2014). *EDX microanalysis of breast cancers: elemental and phenotypic characterization and relationship to radiodensity of microcalcifications*. Congresso annuale di anatomia patologica SIAPEC IAP 2014. Firenze, Italy.
346. Bianchi A, Ginestroni A, Diciotti S, Toschi N, Giannelli M, Mascalchi M (2014). *Progression of brain atrophy in spinocerebellar ataxia type 2: a longitudinal tensor-based morphometry study*. 46° Congresso Nazionale Società Italiana di Radiologica Medica, Firenze, Italy.
347. Nezzo M, Manenti G., Toschi N, Lanzafame S, Chegai F, Simonetti G (2014). *Applying Diffusional Kurtosis Imaging in detecting prostate cancer*. 46° Congresso Nazionale Società Italiana di Radiologica Medica, Firenze, Italy.
348. Di Giuliano F, Garaci F, Toschi N, Marziali S, Simonetti G, Floris R (2014). *Diffusion Tensor Imaging in Kennedy's Disease*. 46° Congresso Nazionale Società Italiana di Radiologica Medica, Firenze, Italy.
349. Marrale M, Giorgio C, Gagliardo C, Toschi N, Midiri M, Brai M (2014). *Diffusion Kurtosis Imaging: prime applicazioni cliniche in ambito neuroradiologico*. Dagli atomi al cervello - Le Scienze di Base per la comprensione delle funzioni del cervello. Milano, Italy.
350. Duggento A, Guerrisi M, Tessa C, Giannelli M, Toschi N (2013). *Assessing model uncertainty as a function of acquisition parameters in Diffusion Tensor Imaging*. VIII Congress of the Italian Association for Medical Physics (AIFM), Torino, Italy.
351. Lanzafame S, Guerrisi M, Giannelli M, Toschi N (2013). *Cortical and Subcortical characterization of "diffusional kurtosis imaging" metrics in the human brain*. VIII Congress of the Italian Association for Medical Physics (AIFM), Torino, Italy.

352. Collura G, Marrale M, Toschi N, Gagliardo C, Midiri M, Brai M (2013). *Sviluppo di un software per l'analisi di immagini di Diffusion Kurtosis Imaging*. XXXVI Convegno Associazione Italiana Radioprotezione, Palermo, Italy.
353. Passamonti L, Salsone M, Toschi N, Cerasa A, Giannelli M, Chiriaco C, Cascini G, Vaiti V, Rocca F, Vaccaro MG, Quattrone A (2012). *Dopamine transporter levels drive neurocognitive responses to apomorphine in Parkinson's Disease*. XLIII Congress of the Italian Society for Neurology, Rimini, Italy, 6-9 October 2012.
354. Bessi V, Ginestroni A, Diciotti S, Toschi N, Padiglioni S, Martinenghi G, Sorbi S, Mascalchi M, Bracco L (2012). *Magnetization Transfer Imaging in mild Alzheimer's Disease and Mild Cognitive Impairment*. XLIII Congress of the Italian Society for Neurology, Rimini, Italy, 6-9 October 2012.
355. Toschi N, Belmonte G, Pesaresi I, Ghedin P, Traino AC, Bartolozzi C, Guerrisi M, Cosottini M, Giannelli M (2011). *DTI measurements of fractional anisotropy and mean diffusivity at 1.5 T: comparison of two radiofrequency head coils with different functional designs and sensitivities*. XCVII National Congress of the Italian Physical Society, l'Aquila, Italy, 2011.
356. Toschi N, Duggento A, Coniglione F, Dauri M, Sabato AF, Guerrisi M (2011). *Intra- and inter-beat modeling of cardiovascular dynamics and control: assessing haemodynamic stability and responsiveness*. XCVII National Congress of the Italian Physical Society, l'Aquila, Italy, 2011.
357. Toschi N, Giannelli M, Belmonte G, Guerrisi M (2011). *Diffusion Tensor Imaging through orthogonal tensor invariants and generalized differential operators*. XCVII National Congress of the Italian Physical Society, l'Aquila, Italy, 2011.
358. Duggento A, Toschi N, Romigi A, Marciani MG, Guerrisi M (2011). *Bayesian Dynamical Inference for coupled oscillatory dynamics: application to high resolution EEG*. XCVII National Congress of the Italian Physical Society, l'Aquila, Italy, 2011.
359. Duggento A, Toschi N, Guerrisi M (2011). *Bayesian Inferential Algorithm For Second Order Differential Equations*. XCVII National Congress of the Italian Physical Society, l'Aquila, Italy, 2011.
360. Toschi N, Giannelli M, Belmonte G, Guerrisi M (2009). *Diffusion Tensor Imaging through orthogonal tensor invariants and generalized differential operators* VI Congress of the Italian Association for Medical Physics (AIFM), Reggio Emilia, Italy, 2009.
361. Guerrisi M, Toschi N (2007). *Interventricular coupling coefficients in a thick shell model of passive cardiac chamber deformation*. Xth Congress of the European Federation of Organisations for Medical Physics, Pisa, Italy, 2007.
362. Toschi N, Guerrisi M, Welt T, Keck ME (2007). *An accurate reconstruction of the conductive phenomena elicited by transcranial magnetic stimulation in heterogeneous brain tissue*. Xth Congress of the European Federation of Organisations for Medical Physics, Pisa, Italy, 2007.
363. Guerrisi M, Vannucci I, Toschi N (2006). *A human cardiovascular system model applied to the analysis of high-performance physical activity*. Movement as Prevention and Health, University of Rome Tor Vergata, Rome, Italy, 2006.
364. Toschi N, Guerrisi M (2006). *A model-based investigation of the effect of prolonged athletic activity on cardiac wall geometry and ventricular function*. Movement as Prevention and Health, University of Rome Tor Vergata, Rome, Italy, 2006.
365. Guerrisi M, Canichella A, Vannucci I, Toschi N (2006). *An experimental framework to assess the impact of physical exercise on peripheral arterial elasticity*. Movement as Prevention and Health, University of Rome Tor Vergata, Rome, Italy, 2006.
366. Czeh B, Fischer AK, Fuchs E, Erhardt A, Welt T, Schmitt W, Toschi N, Keck ME (2000). *Chronic psycho-social stress in rats: effects of concomitant repetitive transcranial magnetic stimulation*. Society for Neuroscience Abstracts, 26(1-2).
367. Torner Aguilar L, Thrivikraman KV, Toschi N, Holsboer F, Plotsky PM, Neumann ID (2000). *Effect of adrenalectomy and corticosterone on hypothalamic and peripheral release of oxytocin and behavioral stress coping in male rats*. Society for Neuroscience Abstracts, 26(1-2).
368. Toschi N, Douglas AJ, Rosinski K, Zimbelmann M, Loerscher P, Russell JA, Neumann ID (2000). *Brain oxytocin is not involved in the attenuated hypothalamo-pituitary-adrenal axis response to airpuff exposure during parturition*. Society for Neuroscience Abstracts, 26(1-2).
369. Mueller MB, Toschi N, Kresse AE, Post A, Keck ME (2000). *Long-term rTMS increases the expression of BDNF and CCK mRNA, but not NPY mRNA in specific areas of rat brain*. Society for Neuroscience Abstracts 26(1-2).
370. Toschi N, Torner Aguilar L, Neumann ID (2000). *Oxytocin Within The Supraoptic, But Not Paraventricular, Nucleus Inhibits Local And Peripheral Vasopressin Release*. Neuropeptides 2000, 10th Annual Meeting of the European Neuropeptide Club, Innsbruck, Austria, May 10-13, 2000.
371. Toschi N, Torner Aguilar L, Landgraf R, Neumann ID (2000). *Improved in vivo efficacy of antisense targeting of the brain prolactin receptor by mRNA secondary structure prediction*. Forum of European Neuroscience, Brighton, UK 24-28 June 2000.
372. Douglas AJ, Toschi N, Neumann ID (2000). *Altered noradrenergic mechanisms contribute to stress*

- hyporesponsiveness in late pregnancy. 31st Meeting of the International Society of PsychoNeuroEndocrinology*, Melbourne, Australia, 2000.
373. Toschi N, Torner Aguilar L, Landgraf R, Neumann ID (2000). *Improved efficacy of antisense targeting of the prolactin receptor by molecular modeling: anxiolytic action of brain prolactin. 31st Meeting of the International Society of PsychoNeuroEndocrinology*, Melbourne, Australia, 2000.

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