CURRICULUM VITAE

Anna Vignati, Ph.D

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EDUCATION

November 2006 – 19 January 2010

Ph.D in Complex Systems in Medicine and Life Sciences, Specialization in Complex Systems applied to Post-genomic Biology, Università degli Studi di Torino, Italy.
Thesis title: Fully automatic lesion detection for DCE-MRI breast images.
Supervisor: F. Bussolino (Università degli Studi di Torino, Italy);
Co-supervisor: D. Regge (Candiolo Cancer Institute, IRCCS, Candiolo, Torino).

September 2004 – July 2006

Master of Science, Environmental and Biomedical Physics, Università degli Studi di Torino, Italy.
Final grade: 110/110 cum laude, honorable mention, and publication recommended.
Thesis title: Evaluation of the transit dose in breast brachytherapy treatments with MammoSite applicator.
Thesis performed at: Oncology Hospital San Giovanni Antica Sede, Torino, Italy.
Supervisor: C. Peroni (Università degli Studi di Torino, Italy);
Co-supervisor: U. Nastasi (Ospedale San Giovanni Antica Sede, Torino, Italy).

September 2001 – February 2005

Bachelor Degree, Physics, Università degli Studi di Torino, Italy.
Final grade: 110/110 cum laude.
Thesis title: Evaluation of the correction factor for a plate ionization chamber calibrated at Co60.
Thesis performed at: DKFZ - German Cancer Research Center, Heidelberg, Germany.
Supervisor: R. Cirio (Università degli Studi di Torino, Italy);
Co-supervisor: G. Hartmann (DKFZ, Heidelberg, Germany).

September 1996 – July 2001

College, Diploma di maturità classica, Liceo Classico Statale M. D'Azeglio, Torino, Italy,
Final grade: 100/100 cum laude.

TRAINING

March 2015

European Society for Radiotherapy and Oncology (ESTRO) teaching course on Particle Therapy, Paris, France.

February 2009

Statistical Methods in Medical Imaging and Bioengineering with applications to Observer Performance Evaluation. SPIE (International Society for Optics and Photonics) Medical Imaging Congress, Orlando, Florida, USA.

November 2008

Course of advanced MR techniques: from the origin to the in vivo applications. Centro di cultura scientifica Alessandro Volta, Como, Italy.

WORK EXPERIENCE

December 2021 - Today

Università degli Studi di Torino, Physics Dept - Tenure-track Assistant Professor (RTD-B) and INFN (National Institute of Nuclear Physics) associate with research assignment. Research Activity: Physics applied to Medicine and Life Science – Development of instrumentations for radiotherapy with external beams, focusing on FLASH protons/electron beams.
Work Package Leader of "beam monitoring and dosimetry" Work Package within the INFN FRIDA project (FLASH Radiotherapy with hIgh Dose-rate particle beAms);
Principal Investigator of Flame "Flash Monitoring Engine"- Compagnia di San Paolo - Bando ex-post - Anno 2020;
Principal Investigator of Grant for Internationalization – Isidora (Innovative Silicon systems for Irradiations with high Dose Rates) in collaboration with the University of Wollongong (Australia) and Université Savoie Mont Blanc (Annecy, France).

July 2019 – November 2021	**Università degli Studi di Torino, Physics Dept. – Non-tenured track Assistant Professor (RTD-A).** Research Activity: Physics applied to Medicine and Life Science – Development of instrumentations for radiotherapy with external beams.
March 2017 – June 2019	INFN – Torino. **Post-doc fellowship (Assegno di ricerca)**: nuclear technologies applied to Medical Physics. Development of new devices for monitoring and characterization of charged particle beams, based on innovative silicon detectors with internal gain layer (LGAD), optimized for excellent time resolutions (Ultra Fast Silicon Detectors, UFSDs). **MoveIT – INFN project, leader of the Work Package 4 for the Torino division** (development of UFSD sensors).
September 2016 – Today	**Teacher** (permanent position) in Mathematics and Sciences at the secondary school "Istituto Comprensivo Vivaldi-Murialdo" (Torino, Italy), temporarily on unpaid leave for research activity (aspettativa per assegno di ricerca).
November 2014 – August 2016	INFN – Torino. **Post-doc fellowship (Assegno di ricerca)**: nuclear technologies applied to Medical Physics. Development of a forward planning algorithm on GPU, integrated in a dose delivery system, allowing the assessment of on-line distribution of the dose in treatments with active scanning of ion beams (**RIDOS-INFN project**).
January 2010 – November 2014	FPRC – Fondazione Piemontese per la Ricerca sul Cancro, IRCCS, Candiolo Cancer Institute, Candiolo (Torino), Italy. FPO – Fondazione del Piemonte per l'Oncologia, IRCCS, Candiolo (Torino), Italy. **Post-doc fellowship, Image and Data Processing Lab** (directed by Dr. D. Regge). Development of automatic algorithms to detect and classify breast lesions on Dynamic Contrast Enhanced Magnetic Resonance (DCE-MR) images. Development of a Computer Aided Diagnosis (CAD) system to assist radiologists during the report process of multiparametric MR prostate exams.
November 2006 – January 2010	ISI – Institute for Scientific Interchange Foundation, Torino, Italy. **PhD student, Medical Imaging unit** (Dr. D. Regge).

TEACHING

as of May 2023	Professor at the Università degli Studi di Torino (Italy) for: ✓ Physics course – Bachelor Degree in Production and Management of Domestic and Wild Animals; ✓ Biomedical Physics Laboratory – Master of Science in Biomedical Physics; ✓ Instrumentation and Measurement of Radioactivity Laboratory - Specialization School in Medical Physics; ✓ Physics Course - Specialization School in Hygiene and Preventive Medicine; ✓ Physics Course - online teaching project Start@UniTO
as of September 2020	Assistant Professor in the Physics Course, Bachelor Degree in Chemistry and Chemical Technology, Università degli Studi di Torino, Italy
2010 – 2019	Teaching collaboration for the Physics Course at the Bachelor Degree of Arts in Nursing and at the Bachelor Degree in Pharmacy, Università degli Studi di Torino, Italy.
September – November 2014	Mathematics and Sciences Professor at the Secondary school of Piobesi Torinese, Italy.
June 2013	Teaching Qualification, TFA Ordinario A059, Mathematics and Science, Università degli Studi di Torino, Italy. Final Grade: 99/100.
September – December 2011	Mathematics and Physics Professor at Liceo Scientifico S. Anna, Torino, Italy.
2008 – 2012	Scientific Board, Collegio Universitario Camplus Bernini, Fondazione C.E.U.R., Torino, Italy. Mathematics and Physics Tutoring.
February – March 2006	Immaginazione e Lavoro, Società cooperativa, Torino, Italy. Professor of Mathematics and Physics, vocational school.

INVITED SPEAKER

October 2023	*Innovative beam monitors for FLASH radiotherapy.* INSIGHTS workshop, INnovative Systems In radiation therapy: breakthrouGHs novel detectors, Treatments and AI techniqueS. Università di Pisa - Dipartimento di Fisica, Italy.
September 2023	*The challenges of beam monitoring from particle therapy to FLASH radiotherapy.* SIF (Italian Physical Society) National Congress 2023, Salerno, Italy.

September 2022	*Beam monitoring di fasci UHDPP.* Lecture at "FLASH Radiotherapy: radiobiologia, prospettive cliniche, aspetti tecnologici e dosimetrici" course, Scuola Caldirola - AIFM, Pisa, Italy.
May 2022 (ONLINE)	*Beam monitoring in UHDR.* Seminar at AIFM (Italian Association of Medical Physics) Futurus Webinar.
February 2022 (ONLINE)	*Nuove tecnologie per il monitoraggio di fasci terapeutici di protoni e ioni carbonio.* Seminar at CNAO (Italian National Centre for Oncological Hadrontherapy), Pavia, Italy
January 2021 (ONLINE)	*Applicazioni della fisica in medicina.* Lecture at the Physical Engineering course "Fisica Nucleare con Applicazioni Biomediche", Politecnico, Torino, Italy.
February 2020	*Thin low-gain avalanche detectors for particle therapy applications*. International Conference on Mini-Micro and Nano-Dosimetry (MMND). Wollongong, Australia
November 2018	*Rivelatori al Silicio ultra-fast per applicazioni mediche*. Quarto Incontro Nazionale dell'INFN. Laboratori Nazionali del Sud, Catania, Italy.
October 2018	*Fast Silicon Detectors for beam monitoring in proton therapy: preliminary results*. PRAE International Workshop, Orsay, France.
May 2018	*Fast Silicon Detectors for beam monitoring in proton therapy: MoVeIT preliminary results*. Workshop on Pico-second timing detectors for physics and medical applications. 2018 May 16-18 Torino, Italy.
January 2016	*Fast dose analysis of movement effects during treatments with scanned proton and carbon-ion beams*. Micro-Mini and Nano-Dosimetry and Innovative Technologies in Radiation Therapy (MMND-ITRO) Conference, 2016 January 26-31, Hobart, Australia.
June 2015	*A new algorithm for automatic vascular mapping of DCE-MRI of the breast: clinical application of a potential new biomarker*. National conference of Società Italiana di Radiologia Medica (SIRM) Sezione di Senologia, 2015 June, 8-10, Verona, Italy.
July 2013	*Quando il medical imaging chiede aiuto alla matematica,* Mathematics Department "Peano", Università degli Studi di Torino, Italy.

ORAL PRESENTATIONS

September 2021	*LGAD-based detectors for monitoring therapeutic proton beams.* PSD12: The 12th International Conference on Position Sensitive Detectors, 12-17 September 2021, University of Birmingham, England (UK).
June 2019	*Innovative silicon detectors for measuring the energy of clinical proton beams: Preliminary results*. 58th Annual Conference of the Particle Therapy Co-operative Group (PTCOG), June 10-15, 2019, Manchester (UK).
May 2018	*Innovative strip silicon detectors for proton beam monitoring: preliminary results*. 57th International Conference of Particle Therapy Co-operative Group (PTCOG), 21-26 May 2018, Cincinnati, Ohio, USA.
February 2018	*MoVeIT strip silicon detectors for proton beam monitoring: preliminary results*. 13th "Trento" International Workshop on Advanced Silicon Radiation Detectors, Max-Planck-Institut für Physik, Munich, Germany.
September 2017	*Innovative thin silicon detectors for monitoring of therapeutic proton beams: preliminary beam tests.* 11th International Conference on Position Sensitive Detectors (PSD11), The Open University, Milton Keynes, UK.
February 2016	*Study of the dose delivery system inaccuracies and their impact on the dose distribution during the first years of the CNAO clinical activity.* National Conference of the Italian Association for Medical Physics (AIFM) 2016, Perugia, Italy.
September 2015	*The RIDOS-INFN project: an on-line GPU forward planning integrated into a dose delivery system for hadrontherapy with scanning ion beams*. 101st National Congress of the Italian Physics Society (SIF), Roma, Italy.
September 2014	*Prostate cancer aggressiveness: new potential biomarkers from texture analysis of T2-weighted Magnetic Resonance Imaging*. International meeting of the European Society of Medical Imaging Informatics and academy course 2014. Warsaw, Poland.
December 2013	*Computer-aided Detection of Prostate Cancer Based on Automatic Multiparametric Magnetic Resonance Image Analysis*. International Congress of the Radiological Society of North America (RSNA) Annual Meeting, Chicago (Il), USA.

October 2013	*Il principio di Archimede e il galleggiamento: valorizzare l'esperienza.* National Teaching Congress of Physics and Mathematics (DIFIMA), Torino, Italy.
May 2008	*Un nuovo sistema per l'identificazione e la caratterizzazione di lesioni neoplastiche della mammella con risonanza magnetica dinamica con impiego di mezzi di contrasto (DCE-MRI).* National Congress of the Italian Society of Medical Radiology (SIRM), Roma, Italy.

PUBLIC ENGAGEMENT - OUTREACH

2021 - Today	Inventor of the **Escape Room – Medical Physics**, presented at Researchers' Night 2021 and 22, Science Festival (Genova, 2021), Scienza sotto la cupola (Novara, 2023), and planned for exposition at the AIFM National Congress (June 2023) and at the Reasearchers' Night in Torino and at CNAO (Pavia) in September 2023.
2020 - Today	Porte Aperte a Fisica – Co-organizer of the presentation of the degree course in Physics to high-school students and guided tour of the research laboratories at the Physics Department, Università degli Studi di Torino, Italy
2020	SHARPER (https://www.sharper-night.it/sharper-torino/). Presentation of *Applications of Physics in Medicine* at the ONLINE edition of the Researchers' Night.
2020 - Today	Il Mestiere del Fisico – Speaker, organizer or chair of the round table about employment and professional outlets after Physics graduation. Physics Department, Università degli Studi di Torino, Italy
July 2019 *January 2020* *July 2023*	CAMPUS MFS (http://www.campusmfs.it/). Organized by the Lagrange scientific training school (Torino), the Campus offers advanced scientific and technological training courses held by university professors, researchers and high school teachers to involve high school students on the most current topics of scientific research.
December 2018	*Dalla fisica nuovi strumenti per la cura dei tumori. L'adroterapia nella pratica clinica: quali evidenze?* Rotary Club Ciriè e Valli di Lanzo, Jet Hotel, Caselle Torinese, Italy
April 2018	*Dalla fisica nuovi strumenti per la diagnosi e la cura dei tumori*. WARP 2018, Cavallerizza Reale, Torino.
May 2016	*Technology is good: from bio-sensors to the treatment of cancer*. Pint of Science (International scientific outreach festival https://pintofscience.it/).
March 2016	*Dalla fisica nuovi strumenti per la cura dei tumori*. Scuola di Fisica 2016, Cavallerizza Reale, Torino, Italy.

ORGANIZATION OF SCIENTIFIC MEETINGS

June 2021	Member of Local Organizing Committee, 3rd European Congress of Medical Physics (ECMP), Torino, Italy http://www.ecmp2020.org/
February 2017	Member of Local Organizing Committee, EuCARD2, Workshop on Innovative Delivery Systems in Particle Therapy (44 participants) https://agenda.infn.it/event/12108/overview
February 2014	*COLLOQUIA. Real-life Signals Analysis Meets Theory.* Interdisciplinary Meeting on Signal Processing at Mathematics Department "Peano", Università degli Studi di Torino, Italy.

AWARDS, NATIONAL SCIENTIFIC QUALIFICATION, PATENTS AND REVIEWING ACTIVITIES

February 2016	*Study of the dose delivery system inaccuracies and their impact on the dose distribution during the first years of the CNAO clinical activity*. Best Oral Presentation **Award** (young researchers) at the AIFM (Italian Association for Medical Physics) congress 2016, Perugia, Italy.
June 2015	*A new algorithm for automatic vascular mapping of DCE-MRI of the breast: Clinical application of a potential new biomarker* **awarded** as the sixth best Italian study on breast radiology (published between April 2013 and June 2015) - Italian Society of Medical Radiology (SIRM) - Breast Section.
June 2013	*A fully automatic multiscale 3-dimensional Hessian-based algorithm for vessel detection in breast DCE-MRI* **awarded** as the third best Italian study on breast radiology (published between June 2011 and March 2013) - Italian Society of Medical Radiology (SIRM) - Breast Section.

April 2018 National Scientific Qualification, associate Professor (**Abilitazione Scientifica Nazionale**, II fascia, ai sensi dell'articolo 16 della legge 30 dicembre 2010, n. 240).

September 2016 Successful candidate of the public teaching competition 2016 D.D.G. 106/2016 for teaching class A028 (ex A059, Mathematics and Sciences in Secondary school). Final grade: 93.75/100.

Patent **Co-inventor in the patent application** n. EP 2386102 A1, title: Method and system for the automatic recognition of lesions in a set of breast magnetic resonance images. Applicant: IM3D S.p.A;

Co-inventor in the patent application 102021000025190 (Innovative device to measure the energy of therapeutic proton beams).

Reviewer for Frontiers in Physics (*Guest Editor*), Journal of Advances in Medicine and Medical Research, Physics in Medicine and Biology, Biomedical Physics & Engineering Express Investigative Radiology, World Journal of Engineering and Physical Sciences, Nuclear Science and Techniques, Nuclear Instrumentation and Methods in Physics Research B, World Journal of Engineering and Physical Sciences, MDPI – Cancers, MDPI – Instruments.
External reviewer for VQR (ANVUR – National Agency for the Evaluation of the Universities and Research Institutes).
Reviewer for VINCI project (https://www.universite-franco-italienne.org/menu-principal/bandi/programma-vinci/bando-2023/)

INSTITUTIONAL RESPONSIBILITIES

as of today Member of the teaching laboratories Commettee (Commissione laboratori didattici), member of the Faculty, of the Department, of the "Giunta", and of the Educational Guidance (orientamento) Councils of the Physics Department, Università degli Studi di Torino.

RESEARCH METRICS (SCOPUS)

Documents	51
Citations	630
H-index	13

PUBLICATIONS

Journals

1. Romano F, Milluzzo G, Di Martino F, D'Oca MC, Felici G, Galante F, Gasparini A, Mariani G, Marrale M, Medina E, Pacitti M, Sangregorio E, Vanreusel V, Verellen D, **Vignati A**, Camarda M. First Characterization of Novel Silicon Carbide Detectors with Ultra-High Dose Rate Electron Beams for FLASH Radiotherapy. Applied Sciences. 2023; 13(5):2986.
2. O.A. Marti Villarreal, **A. Vignati**, S. Giordanengo, M. Abujami, G. Borghi, M. Centis Vignali, E. Data, M. Ferrero, F. Ficorella, C. Galeone, O. Hammad Ali, F. Mas Milian, E. Medina, L. Menzio, D.M. Montalvan Olivares, G. Peroglio Carus, R. Cirio, V. Monaco, R. Sacchi, Marco Donetti, Marco Pullia. Characterization of thin LGAD sensors designed for beam monitoring in proton therapy, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 1046, 2023, 167622, ISSN 0168-9002.
3. Medina E, Sangregorio E, Crnjac A, Romano F, Milluzzo G, **Vignati A**, Jakšic M, Calcagno L, Camarda M. Radiation Hardness Study of Silicon Carbide Sensors under High-Temperature Proton Beam Irradiations. Micromachines. 2023; 14(1):166.
4. Giordanengo S, Guarachi LF, Braccini S, Cirrone GAP, Donetti M, Fausti F, Mas Milian F, Romano F, **Vignati A**, Monaco V, Cirio R, Sacchi R. Fluence Beam Monitor for High-Intensity Particle Beams Based on a Multi-Gap Ionization Chamber and a Method for Ion Recombination Correction. Applied Sciences. 2022; 12(23):12160.

5. M. Mohammadian-Behbahani, V. Monaco, M. Abujami, D. Bersani, E. Data, C. Galeone, S. Giordanengo, O. Hammad Ali, O. A. Martì Villarreal, F. Mas Milian, D. M. Montalván-Olivares, E. Richetta, A. Staiano, M. Stasi, **A. Vignati**, R. Cirio, R. Sacchi, Two-channel combination methods for count-loss correction in radiation measurements at high rates and with pulsed sources, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 1040, 2022, 167195, ISSN 0168-9002.
6. Ferrero V, Werner J, Cerello P, Fiorina E, **Vignati A**, Pennazio F, Rafecas M. Estimating the stopping power distribution during proton therapy: A proof of concept. Frontiers in Physics, Volume 10, 2022, ISSN=2296-424X
7. M Donetti, S Giordanengo, C Graeff, M Lis, F Mas Milian, M Pullia, T. Steinsberger, A Vignati, S Rossi.Current and Future Technologies of the CNAO Dose Delivery System, in IEEE Instrumentation & Measurement Magazine, vol. 24, no. 9, pp. 61-69, December 2021
8. Fausti F., Olave J., Giordanengo S., Hammad Alì O., Mazza G., Rotondo F., Wheadon R., **Vignati A**., Cirio R., Monaco V., Sacchi R. A single ion discriminator ASIC prototype for particle therapy applications (2021). Nuclear Instruments and Methods in Physics Research, Section A, 985, art. no. 164666.
9. **Vignati A.**, Giordanengo S., Mas Milian F., Ganjeh Z.A., Donetti M., Fausti F., Ferrero M., Hammad Ali O., Martì Villarreal O.A., Mazza G., Shakarami Z., Sola V., Staiano A., Cirio R., Sacchi R., Monaco V. A new detector for the beam energy measurement in proton therapy: a feasibility study (2020). Physics in Medicine and Biology, 65 (21), art. no. 215030.
10. **Vignati A.**, Giordanengo S., Fausti F., Martì Villarreal O.A., Mas Milian F., Mazza G., Shakarami Z., Cirio R., Monaco V., Sacchi R. Beam Monitors for Tomorrow: The Challenges of Electron and Photon FLASH RT (2020). Frontiers in Physics, 8, art. no. 375.
11. Mandurrino M., Arcidiacono R., Boscardin M., Cartiglia N., Dalla Betta G.F., Ferrero M., Ficorella F., Pancheri L., Paternoster G., Siviero F., Sola V., Staiano A., **Vignati A.** Analysis and numerical design of Resistive AC-Coupled Silicon Detectors (RSD) for 4D particle tracking (2020). Nuclear Instruments and Methods in Physics Research, Section A, 959, art. no. 163479.
12. **Vignati A.**, Hosseini S.M.A., Attili A., Ciocca M., Donetti M., Giordanengo S., Marchetto F., Mas Milian F., Russo G., Cirio R., Monaco V., Sacchi R. Accuracy assessment of the CNAO dose delivery system in the initial period of clinical activity and impact of later improvements on delivered dose distributions (2020). Medical Physics, 47 (4), pp. 1468-1480.
13. Giordanengo S., **Vignati A.**, Attili A., Ciocca M., Donetti M., Fausti F., Manganaro L., Mas Milian F., Molinelli S., Monaco V., Russo G., Sacchi R., Varasteh Anvar M., Cirio R. RIDOS: a new system for online computation of the delivered dose distributions in scanning ion beam therapy (2019). Physica Medica, 60, pp. 139-149.
14. Manganaro L., Russo G., Bourhaleb F., Fausti F., Giordanengo S., Monaco V., Sacchi R., **Vignati A.**, Cirio R., Attili A. 'Survival': a simulation toolkit introducing a modular approach for radiobiological evaluations in ion beam therapy (2018). Physics in Medicine and Biology, 63 (8), art. No. 08NT01
15. Giordanengo S., Manganaro L., **Vignati A**. Review of technologies and procedures of clinical dosimetry for scanned ion beam radiotherapy (2017). Physica Medica 43, pp. 79-99.
16. Manganaro L., Russo G., Cirio R., Dalmasso F., Giordanengo S., Monaco V., Sacchi R., **Vignati A**., Attili A. A Monte Carlo approach to the microdosimetric kinetic model to account for dose rate time structure effects in ion beam therapy with application in treatment planning simulations. Medical Physics (2017) 44(4), pp. 1577-1589.
17. Fausti F., Mazza G., Attili A., Fadavi Mazinani M., Giordanengo S., Lavagno M., Manganaro L., Marchetto F., Monaco V., Sacchi R., **Vignati A.**, Cirio R. Design and characterization of a 64 channels ASIC front-end electronics for high-flux particle beam detectors (2017). Nuclear Instruments and Methods in Physics Research, Section A, 867, pp. 1-6.

18. Romano F., Schillaci F., Cirrone G.A.P., Cuttone G., Scuderi V., Allegra L., Amato A., Amico A., Candiano G., De Luca G., Gallo G., Giordanengo S., Fanola Guarachi L.K., Korn G., Larosa G., Leanza R., Manna R., Marchese V., Marchetto F., Margarone D., Milluzzo G., Petringa G., Pipek J., Pulvirenti S., Rizzo D., Sacchi R., Salamone S., Sedita M., **Vignati A**. The ELIMED transport and dosimetry beamline for laser-driven ion beams (2016). Nuclear Instruments and Methods in Physics Research, Section A, 829, pp. 153-158.
19. Varasteh Anvar M., Attili A., Ciocca M., Donetti M., Fanola Guarachi L.K., Fausti F., Giordanengo S., Marchetto F., Molinelli S., Monaco V., Sacchi R., **Vignati A.**, Cirio R. Quality assurance of carbon ion and proton beams: A feasibility study for using the 2D MatriXX detector. Physica Medica (2016) 32 (6), pp. 831-837.
20. Russo F., Regge D., Armando E., Giannini V., **Vignati A.**, Mazzetti S., Manfredi M., Bollito E., Correale L. and Porpiglia F. Detection of prostate cancer index lesions with multiparametric magnetic resonance imaging (mp-MRI) using whole-mount histological sections as the reference standard (2016). BJU International 118 (1), pp. 84-94.
21. Cirio R., Fausti F., Fanola Guarachi L.K., Giordanengo S., Marchetto F., Mazza G., Monaco V., Sacchi R., Talpacci E., Varasteh Anvar M., **Vignati A**. A simple method to increase the current range of the TERA chip in charged particle therapy applications (2015). Nuclear Instruments and Methods in Physics Research, Section A, 798, pp. 107–110.
22. Giannini V., Mazzetti S., **Vignati A.**, Russo F., Bollito E., Porpiglia F., Stasi M., Regge D. A fully automatic computer aided diagnosis system for peripheral zone prostate cancer detection using multi-parametric magnetic resonance imaging (2015). Computerized Medical Imaging and Graphics 46, pp. 219-226.
23. **Vignati A.**, Mazzetti S., Giannini V., Russo F., Bollito E., Porpiglia F., Stasi M., Regge D. Texture features on T2-weighted magnetic resonance imaging: new potential biomarkers for prostate cancer aggressiveness (2015). Physics in Medicine and Biology 60(7), pp. 2685-701.
24. Giannini V., **Vignati A.**, De Luca M., Mazzetti S., Russo F., Armando E., Stasi M., Bollito E., Porpiglia F., Regge D. A novel and fully automated registration method for prostate cancer detection using Multiparametric Magnetic Resonance Imaging (2015). Journal of Medical Imaging and Health Informatics 5(6) pp. 1171-1182.
25. **Vignati A.**, Giannini V., Carbonaro L.A., Bertotto I., Martincich L., Sardanelli F., Regge D. A New Algorithm for Automatic Vascular Mapping of DCE-MRI of the Breast: Clinical Application of a Potential New Biomarker (2014). Computer Methods and Programs in Biomedicine 117(3), pp. 482-8.
26. **Vignati A.**, Giannini V., Bert A., Borrelli P., De Luca M., Martincich L., Sardanelli F., Regge D. A Fully Automatic Multi-Scale 3D Hessian-Based Algorithm for Vessel Detection in Breast DCE-MRI (2012). Investigative Radiology 47(12), pp. 705-10.
27. Agliozzo S., De Luca M., Bracco C., **Vignati A.**, Giannini V., Martincich L., Carbonaro L., Bert A., Sardanelli F., Regge D. Computer-Aided Diagnosis for Dynamic Contrast-Enhanced of Mass-like Lesions at Breast MRI using a Multiparametric Model Combining a Selection of Morphological, Kinetic, and Spatio-temporal Features (2012). Medical Physics, 39(4), pp. 1704-15.
28. **Vignati A.**, Giannini V., De Luca M., Morra L., Persano D., Carbonaro L.A., Bertotto I., Martincich L., Regge D., Bert A., Sardanelli F. Performance of a fully automatic lesion detection system for breast DCE-MRI (2011). Journal of Magnetic Resonance Imaging, 34, pp. 1341–1351.

Conference papers

29. V. Ferrero, J. Werner, M. Aglietta, P. Cerello, E. Fiorina, A. Gorgi, **A. Vignati**, M. Rafecas, F. Pennazio. The MERLINO project: characterization of LaBr3:Ce detectors for stopping power monitoring in proton therapy. JINST 17 C11013
30. **A. Vignati**, M. Abujami, D. Bersani, G. Borghi, M. Centis Vignali, E. Data, F. Ficorella, C. Galeone, S. Garbolino, S. Giordanengo, O. Hammad Ali, O.A. Martì Villarreal, F. Mas Milian, G. Mazza, A. Staiano, R.J. Wheadon, R. Cirio, R. Sacchi, V. Monaco. Monitoring therapeutic proton beams with LGAD silicon detectors 2022 JINST 17 C11001
31. Sacchi R., Ahmadi Ganjeh Z., Arcidiacono R., Attili A., Cartiglia N., Donetti M., Fausti F., Ferrero M., Giordanengo S., Hammad Ali O., Mandurrino M., Manganaro L., Mazza G., Monaco V., Sola V., Staiano A., **Vignati A**., Cirio R. Test of innovative silicon detectors for the monitoring of a therapeutic proton beam (2020) Journal of Physics: Conference Series, 1662 (1), art. no. 012002.
32. **Vignati A**., Donetti M., Fausti F., Ferrero M., Giordanengo S., Hammad Ali O., Martì Villarreal O.A., Mas Milian F., Mazza G., Monaco V., Sacchi R., Shakarami Z., Sola V., Staiano A., Tommasino F., Verroi E., Wheadon R., Cirio R. Thin low-gain avalanche detectors for particle therapy applications (2020). Journal of Physics: Conference Series, 1662 (1), art. no. 012035.
33. Ferrero M, Hammad Ali O., Arcidiacono R., Boscardin M., Cartiglia N., Cenna F., Cirio R., Costa, M., Della Betta G.F., Ficorella F., Giordanengo S., Mandurrino M., Monaco V., Obertino M.M., Pancheri L., Paternoster G., Sacchi R., Siviero F., Sola V., Staiano A., **Vignati A**. Developments in the FBK Production of Ultra-Fast Silicon Detectors (2018). 2017 IEEE Nuclear Science Symposium and Medical Imaging Conference, NSS/MIC 2017 - Conference Proceedings, art. no. 8533035.
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Books

V. Giannini, **A. Vignati**, M. De Luca, S. Agliozzo, A. Bert, L. Morra, D. Persano, F. Molinari, and D. Regge. Registration, Lesion Detection, and Discrimination for Breast Dynamic Contrast-Enhanced Magnetic Resonance Imaging. In Multimodality Breast Imaging: Diagnosis and Treatment. Spie Press Book. Editor(s): E. Y. K. Ng; U. Rajendra Acharya; Rangaraj M. Rangayyan; Jasjit S. Suri. Published: 4 March 2013; 572 pages; Hardcover. ISBN: 9780819492944. Volume: PM227.

COMPETENCES

MOTHER TONGUE	Italian
OTHER LANGUAGES	**FRENCH** (*Understanding, Speaking, Writing: C1)* **ENGLISH** (*Understanding, Speaking, Writing: C1)* **GERMAN** (*Understanding, Speaking, Writing: A1)*
PROGRAMMING LANGUAGES	C, C++
OPERATING SYSTEMS	Windows, Unix, Linux.
TECHNICAL SKILLS	Medical Image Analysis, Matlab, ITK libraries, GPU programming (CUDA).

CAREER BREAKS

April 2009	Maternity (5 months)
Jan 2011	Maternity (5 months)
Sept 2016	Maternity (6 months)

I authorize the processing of my personal data under D.Lgs. n.196 of 30/06/2003

Torino, 06/05/2023 Anna Vignati