Curriculum Vitae

PERSONAL INFORMATION

NICOLA MAFFEI

WORK EXPERIENCE

03/2018 – today

Research Scholarship

"Automation of Radiotherapy planning processes in Quasi-Real Time Planning" Dpt. Medical Physics Az. Ospedaliero-Universitaria Modena, Modena

03/2017 – 02/2018

Research Scholarship

"Dosimetric evaluation and correlation with clinical outcomes in patients with breast cancer, as part of the project: "Breast cancer with low risk of local recurrence - 3D conformal accelerated and hypofractionated partial breast irradiation vs standard whole breast radiotherapy after conservative surgery". Az. Ospedaliero-Universitaria Modena, Modena

Academic year: 2017/18
2018/19

Teaching

Dpt. of Surgical, Medical, Dental and Morphological Sciences with Interest transplant, Oncological and Regenerative Medicine of the University of Modena and Reggio Emilia
Teaching: Medical Informatics (INF / 01)
- CDL biomedical laboratory techniques
- CDL medical imaging and radiotherapy techniques
- CDL dental hygiene
- CDL diet
- CDL obstetrics
- CDL cardio-circulatory physiopathology and cardiovascular perfusion techniques

07/2014 – 11/2016

Research Scholarship

"*Dose accumulation and neural networks development for Adaptive Radiotherapy"* Dpt. Medical Physics Az. Ospedaliero-Universitaria Modena, Modena

EDUCATION AND TRAINING

Academic year: 2015/16 - 2017/18

Medical Physics Postgraduate Degree

UNIVERSITY OF TURIN, Turin

07/2016

1st level Qualified Expert

Italian Ministry of Labor and Social Policy – Rome

Academic year: 2011/12 - 2012/13

Applied Physics Master's Degree

ALMA MATER STUDIORUM UNIVERSITY of BOLOGNA – Bologna.

Academic year: 2006/07 - 2010/11

Physics Bachelor's Degree

UNIVERSITY of BARI – Bari.

PERSONAL SKILLS

Mother tongue: Italian

other language

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2

PUBLICATIONS

- *Evaluation of the effectiveness of novel single-intervention adaptive radiotherapy strategies based on daily dose accumulation. Medical Dosimetry. 2019; 44: 379-384.*
- *Expert system classifier for Adaptive Radiation Therapy in prostate cancer.* Australasian Phys Eng Sci Med. 2017; 40: 337-348.
- *A machine learning tool for re-planning and adaptive RT: A multicenter cohort investigation*. Physica Medica. 2016; 32: 1659–1666.
- *SIS epidemiological model for adaptive RT: Forecasting the parotid glands shrinkage during tomotherapy treatment.* Medical Physics. 2016; 43: 4294-4303.
- *Radiosurgery using Tomotherapy for patients with brain oligo-metastasis: a retrospective analysis on feasibility and tolerance*. Anticancer Research. 2015; 35: 6805-6812.
- *A Support Vector Machine tool for Adaptive Tomotherapy treatments: prediction of Head and Neck patients criticalities*. Physica Medica. 2015; 31: 442–451.
- *Real-time lung tumor motion modeling for Adaptive Radiation Therapy using LEGO Mindstorms.* Journal of Mechanics in Medicine and Biology. 2015; 15: 1-10.

POSTERS and ABSTRACT

- 30/07-03/08/2017 – *Model Comparison for Commissioning of a Real-Time Dose Delivery Detector for a 6MV Photons Beam*. 59th AAPM, Denver (USA).
- 5-9/05/2017 – *Can ATLAS-based automatic segmentation contour H&N OARs like a physician?*. ESTRO 36, Vienna (Austria).
- 5-9/05/2017 – *Deformable mage Registration and Dose Accumulation for Arc-Total Body Irradiation.* ESTRO 36, Vienna (Austria).
- 29/04-03/05/2016 – *A novel predictive approach to quantify parotids warping using SIS epidemic model.* ESTRO 35, Turin (Italy).
- 29/04-03/05/2016 – *Replanning effects in Tomotherapy treatment using dose accumulation and dose deformation strategies.* ESTRO 35, Turin (Italy).
- 29/04-03/05/2016 – *A Neural Network predictions and follow-up toxicity correlation to validate re-planning during RT.* ESTRO 35, Turin (Italy).
- 29/04-03/05/2016 – *Frameless radiosurgery in brain metastasis with Tomotherapy: a comparison toward dosimetric index*. ESTRO 35, Turin (Italy).
- 29/04-03/05/2016 – *Secondary cancer induction of VMAT technique in breast irradiation: organ equivalent dose estimation*. ESTRO 35, Turin (Italy).
- 29/04-03/05/2016 – *A real-time monitor system for QA and VMAT: sensitivity analysis in clinical practice*. ESTRO 35, Turin (Italy).
- 29/04-03/05/2016 – *A Neural Network analysis to support Adaptive RT strategies: a multicenter retrospective study*. ESTRO 35, Turin (Italy).
- 25-28/02/2016 – Susceptible-infected-susceptible model applied to RT to predict parotid glands shrinkage during 6 weeks of therapy. 9th AIFM National Congress, Perugia (Italy).
- 25-28/02/2016 – Dose accumulation and replanning in H&N patient: A step toward implementation of art in clinical practice. 9th AIFM National Congress, Perugia (Italy).
- 25-28/02/2016 – *Forecasting algorithm to predict re-planning in tomotherapy: Follow-up toxicity correlation*. 9th AIFM National Congress, Perugia (Italy).
- 25-28/02/2016 – *A machine learning tool for re-planning and adaptive RT: A multicenter cohort investigation*. 9th AIFM National Congress, Perugia (Italy).
- 25-28/02/2016 – *Intra-fraction motion in IMRT, VMAT and helical tomotherapy: In vivo dosimetry using TLD and LEGO phantom*. 9th AIFM National Congress, Perugia (Italy).
- 25-28/02/2016 – *New era for QA and VMAT: Real-time monitor system in clinical practice*. 9th AIFM National Congress, Perugia (Italy).
- 25-28/02/2016 – *The organ equivalent dose to quantify secondary cancer induction in breast after VMAT treatments*. 9th AIFM National Congress, Perugia (Italy).
- 21-25/09/2015 – *SIS epidemic model for organ motion investigation in Radiation Oncology.* 101st Physics Italian Society (SIF) National Congress, Rome (Italy).
- 21-25/09/2015 – *4D human breathing: development of an in-vivo dosimetry phantom for Radiation Therapy.* 101st Physics Italian Society (SIF) National Congress, Rome (Italy).
- 24-28/04/2015 – *A 4D LEGO anthropomorphic phantom for intra-fraction motion modeling during patient breathing.* 3rd ESTRO Forum, Barcellona (Spagna).
- 24-28/04/2015 – *Uncertainties of deformable image registration considering motion: a 4D phantom study.* 3rd ESTRO Forum, Barcellona (Spain).
- 24-25/10/2014 – *Irradiated lung tissues in AdaptiveRT approach: some criticalities.* AIFM course: SBRT implementation, sustainability, technological advancement comparative results, Milan (Italy).
- 24-25/10/2014 – *A LEGO Mindstorms biomechanical phantom to simulate breathing motion.* AIFM course: SBRT implementation, sustainability, technological advancement and comparative results, Milan (Italy).
- 24-25/10/2014 – A*daptive lung SBRT: deformable registrations are clinical applicable but some challenges appear.* AIFM course: SBRT implementation, sustainability, technological advancement and comparative results, Milan (Italy).
- 03-05/09/2014 – *An Artificial Neural Network to predict time of re-planning for Tomotherapy treatments.* XIX International Conference on Mechanics in Medicine and Biology (ICMMB), Bologna (Italy).
- 03-05/09/2014 – *Real-Time model for Adaptive Radiation Therapy: a biomechanical approach using a LEGO Mindstorms.* XIX ICMMB, Bologna (Italy).
- 03-05/09/2014 – *Scripting automation and biomechanical modeling for Adaptive Radiation Therapy.* XIX ICMMB, Bologna (Italy).
- 03-05/09/2014 – D*eformable registration of PET in head and neck cancer Tomotherapy treatment: is texture analysis a good predictor?*. XIX ICMMB, Bologna (Italy).
- 04-08/04/2014 – *Deformable registration using python scripting for clinical automation*. ESTRO 33, Vienna (Austria).
- 04-08/04/2014 – *Warping methods for Tomotherapy and IGRT: challenge and predictive analysis in clinical practice.* ESTRO 33, Vienna (Austria).
- 16-19/11/2013 – *Dose accumulation and organ deformation for IGRT and Adaptive RT: possible incompatibility in Radiation Oncology, research and prospects for the new era.* 8th AIFM National Congress, Turin (Italy).