

PANAGIOTIS PAPAGIANNIS, Ph.D.

Assistant Professor

Medical Physics Laboratory, Medical School, University of Athens

Curriculum Vitae

Education

- 2003: Ph.D. in Physics, Nuclear and Particle Physics Sec., Physics Dept., University of Athens
2000: Professional license to practice Medical Physics
2000: M.Sc. in Medical Physics, Medical School, University of Athens
1997: B.Sc. in Physics, Physics Dept., University of Athens

Employment

- 05/2011- present: Assistant Professor, Medical Physics Laboratory, Medical School, University of Athens
2007-2011: Lecturer, Medical Physics Laboratory, Medical School, University of Athens
2004-2007: Postdoctoral Researcher, Nuclear & Particle Physics Sec., Physics Dept., University of Athens
2003-2004: Compulsory military service
2002 : EU Marie Curie stipend fellow, Dept. of Medical Physics & Engineering, Strahlenklinik, Klinikum Offenbach, Johann Wolfgang Goethe Universität, Germany
2000-2003: Research Assistant, Nuclear & Particle Physics Sec., Physics Dept., University of Athens
1999-2000: Medical Physics Intern, Aretaieio University Hospital, Athens

Research Interests

- Radiation therapy with emphasis on: Brachytherapy treatment planning, dose verification & QA
- Computational dosimetry using Monte Carlo simulation and semi-analytical models
- Conventional (TLD, diode, film) and contemporary (3D polymer gel-MRI) experimental dosimetry
- Translational research for assessing the benefit of integrating elements of basic-research to clinical brachytherapy practice

Teaching responsibilities

- Medical Physics: undergraduate Medical students
- Physics of the human body: undergraduate Medical students
- Interaction of ionizing radiation and matter- Dosimetry: postgraduate Medical Physics students
- Radiation Protection: IAEA Regional postgraduate courses on radiation protection and the safety of radiation sources
- Computer applications in intensive care units and contemporary surgery techniques: postgraduate Medical students in the corresponding M.Sc. programs

Professional Service

- Full member of the European Society of Therapeutic Radiation Oncology (ESTRO, www.estro.org).
- Member of the ESTRO working group BRAPHYQS (BRACHYtherapy PHYSICS Quality Assurance System, <http://www.estro.org/estroactivities/Pages/BRAPHYQSHOME PAGE.aspx>). Personal

involvement (inter alia): on-line brachytherapy source dosimetry data registry, brachytherapy uncertainties, internal review of joint AAPM-ESTRO societal recommendations and Task Group reports.

- Referee of articles submitted to the following Journals: Radiotherapy & Oncology (IF 2009: 4,343), Radiation Research (IF 2009: 2.948), Physics in Medicine & Biology (IF 2009: 2,781), Medical Physics (IF 2009: 2,704), Computing in Science & Engineering (IF 2009: 0,886), and Australasian Physical & Engineering Science in Medicine (IF 2009: 0,631).

Theses

- “Monte Carlo and Analytical dosimetry in modern radiotherapy applications”, Ph.D. thesis, University of Athens, 2003.
- “Analytical dosimetry in interstitial brachytherapy. Review and extension of the AAPM TG-43 dosimetric protocol for ^{192}Ir wire sources”, M.Sc. thesis, University of Athens, 2000.
- “Dosimetry of mixed radiation fields (n- γ) using thermo-luminescence detectors”, Diploma thesis, University of Athens, 1997.

Publications / conference contributions

- 45 publications in Peer Reviewed International Journals. IF=109, h-index=16, citations=526 (Source: Scopus Citation Overview, export date: 25/8/2011)
- 31 presentations, 4 invited lectures in international conferences

Book contributions

- 10.2 Experimental Thermo-luminescence Dosimetry in Brachytherapy and 10.3. Applications of Polymer Gel Dosimetry in modern Brachytherapy, in: “The Physics of modern brachytherapy for oncology”, Baltas D, Sakelliou L, Zamboglou N (Eds), Taylor & Francis Books Inc, 2006 (ISBN: 978-0-7503-0708-6).
- Papagiannis P, “Chapter 1: Elements of Modern Physics”, in: “Medical Physics: Diagnostic and Therapeutic use of radiation”, Georgiou E (Ed), Paschalidis Books Ltd, 2008 (ISBN: 978-960-399-906-5, in Greek).
- Papagiannis P, “Chapter 2: Interaction of ionizing radiation and matter”, in: “Medical Physics: Diagnostic and Therapeutic use of radiation”, Georgiou E (Ed), Paschalidis Books Ltd, 2008 (ISBN: 978-960-399-906-5, in Greek).
- Papagiannis P, Dimitriou P, “Chapter 3: Dosimetry of ionizing radiation”, in: “Medical Physics: Diagnostic and Therapeutic use of radiation”, Georgiou E (Ed), Paschalidis Books Ltd, 2008 (ISBN: 978-960-399-906-5, in Greek).
- Papagiannis P, Dimitriou P, “Chapter 4 : Biological effects of exposure to ionizing radiation”, in: “Medical Physics: Diagnostic and Therapeutic use of radiation”, Georgiou E (Ed), Paschalidis Books Ltd, 2008 (ISBN: 978-960-399-906-5, in Greek).
- Papagiannis P, Venselaar J, “Chapter 5: Radiation Protection”, in the upcoming revision of: “The GEC ESTRO Handbook of Brachytherapy”, A. Gerbaulet, R. Pötter, JJ. Mazeron, H. Meertens, E. Van Limbergen (Eds), 2002 (ISBN 90-804532-6).
- Papagiannis P, Yue N J, “Chapter 31: Radiation protection in brachytherapy”, in: “Comprehensive Brachytherapy: physical and Clinical Aspects”, Venselaar J, Meigooni A S, Baltas D, Hoskin P J (Eds), Taylor & Francis Books Inc (in Editing stage).
- Papagiannis P, Beaulieu L, Mourtada F, “Chapter 7: Computational dosimetry methods”, in: “Comprehensive Brachytherapy: physical and Clinical Aspects”, Venselaar J, Meigooni A S, Baltas D, Hoskin P J (Eds), Taylor & Francis Books Inc (in Editing stage).

Invited Lectures

- “Is the future of brachytherapy model based?” Invited lecture in the session: “Physics panel session 3: The advantages and criticalities of new dose calculation algorithms” of the forthcoming World Congress on Brachytherapy, Barcelona, Spain, May 10-12, 2012.
- “Comparisons of current and next generation treatment planning systems”. Invited symposia lecture. 11th Biennial ESTRO Conference on Physics and Radiation Technology for Clinical Radiotherapy, May 8-12 London, UK, 2011.
- “Brachytherapy: Monte Carlo source modeling, dosimetry, and TG-43”. Invited teaching lecture. 10th Biennial ESTRO Conference on Physics and Radiation Technology for Clinical Radiotherapy, Aug. 30- Sep. 3, Maastricht, the Netherlands, 2009.
- “Launching the future of treatment planning with BrachyVision”. Invited lecture in the satellite symposium organized by Varian Medical Systems in the GEC-ESTRO international conference on Brachytherapy, May 13-16, Porto, Portugal, 2009.

Awards

- “Gold medal” nomination in the 56th Brussels-EUREKA Contest 2007 (November 22-25; "The Belgian and International Trade Fair for Technological Innovation ") for: “Dosimeters for two- and three-dimensional measurements of radiation dose distribution in radiotherapy”.
- Co-author in: Polymer gel dosimetry for the TG-43 dosimetric characterization of a new 125I interstitial brachytherapy seed, included in the Institute of Physics Publishing list of selected articles for 2006
- Co-author in: Polymer gel water equivalence and relative energy response with emphasis on low photon energy dosimetry in brachytherapy nominated by the Publishing team of the Physics in Medicine and Biology Journal for inclusion in the Highlights of 2004
- Co-author in: 3D dose verification in ¹⁹²Ir HDR prostate monotherapy using polymer gels and MRI, elected by the International Research Promotion Council (www.irpc.org) as the most significant published work in the field of Medical Physics in Greece in the year 2003

Participation in research projects

a. As Coordinator/Principal Investigator

- “Research proposal for the independent validation of Acuros based dosimetry calculations in brachytherapy”.
Source: Varian Medical Systems SA. (funding was managed by the Special Account of Research Grants of the University of Athens). Start-end: 2008-2011.
- “Breast Brachytherapy QA”.
Source: Special Account of Research Grants of the University of Athens – Kapodistrias 2007. Start-end: 2007-2008.
- “Development of computational and experimental 3D techniques for the planning and QA of contemporary radiation therapy applications”.
Source: General Secretariat for Research and Technology – EPEAEK-PITHAGORAS II, co-funded by the Republic of Greece and the European Regional Development Fund. Start-end: 2005-2007.

b. As a member of the research team

- "Development and application of research dosimetry techniques to the quality assurance of radiation therapy in the clinical setting”.

- Source: The Research Promotion Foundation's Framework Programme for Research, Technological Development and Innovation - Desmi 2008, co-funded by the Republic of Cyprus and the European Regional Development Fund. Start-end: 2008-2010.
- "Pilot investigation of Radon levels in the municipality of Nicosia".
Source: The Research Promotion Foundation's Framework Programme for Research, Technological Development and Innovation - Desmi 2008, co-funded by the Republic of Cyprus and the European Regional Development Fund. Start-end: 2008-2010.
 - "Investigation of the potential use of antiprotons in medical applications for diagnosis and treatment".
Source: General Secretariat for Research and Technology - Slovakia-Greece joint Research and Technological program 2005-2007. Start-end: 2005-2007.
 - "Three-dimensional dosimetry using experimental and computer simulation methods for the quality assurance of contemporary radiation therapy applications".
Source: General Secretariat for Research and Technology - Czech-Greece joint Research and Technological program 2005-2007. Start-end: 2005-2007.
 - "Experimental and computational determination of the dosimetric parameters required for the use of IsoSeed® I-125 source in clinical LDR permanent implant brachytherapy applications".
Source: BEBIG GmbH, Berlin. Start-end: 2006.
 - "Development of chemical dosimetry materials for clinical radiotherapy and radiology applications".
Source: General Secretariat for Research and Technology - Poland-Greece joint Research and Technological program 2005-2007. Start-end: 2005-2007.
 - "Development and standardization of polymer gel dosimeters for radiation applications".
Source: General Secretariat for Research and Technology - Poland-Greece joint Research and Technological program 2003-2005. Start-end: 2003-2005.
 - "Monte Carlo simulation determination of the dosimetric parameters required for the use of the type I, II and III Co-60 sources in clinical HDR remote afterloading brachytherapy applications".
Source: Shimadzu Corporation, Japan. Start-end: 2003.
 - "Monte Carlo simulation determination of the dosimetric parameters required for the use of a new Ir-192 pulsed dose rate source in clinical PDR remote afterloading brachytherapy applications".
Source: Nucletron B.V., The Netherlands. Start-end: 2003.
 - "Development of computational-experimental dosimetry techniques for applications in medical physics and radiation protection".
Source: Greek Ministry of Education - EPEAEK II- IRAKLEITOS. Start-end: 2002-2005.
 - "Tissue mimicking materials for use in radiotherapy".
Source: General Secretariat for Research and Technology - Poland-Greece joint Research and Technological program 2001-2002. Start-end: 2001-2002.
 - "Development of tissue mimicking materials in terms of their biophysical NMR properties for use in MRI and radiotherapy applications".
Source: General Secretariat for Research and Technology – PENED99. Start-end: 1999-2001.
 - "Experimental and computational determination of the dosimetric parameters required for the use of SelectSeed™ I-125 source in clinical LDR permanent implant brachytherapy applications".
Source: Nucletron B.V., the Netherlands. Start-end: 2001.