# Curriculum Vitae



**Personal data**

Name: Pantelis Karaiskos

Current position: Professor and Director,

Medical Physics Laboratory, Medical School,

National and Kapodistrian University of Athens, Greece

Date of birth: 09 June 1969

Nationality: Greek

Status: Married, two children

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**Education**

2002: Ph.D. in Medical Physics, Medical School, National and Kapodistrian University of Athens , Greece

1994: M.Sc. in Medical Physics, University of Aberdeen, UK

1992: B.Sc. in Physics, Physics Dept., University of Athens, Greece

**Employment**

03/2018- present: Director, Medical Physics Laboratory, Medical School, National and Kapodistrian University of Athens

09/2018-present: Director of the Inter-University postgraduate MSc course in "Medical and Radiation Physics”, Greece

08/2017- present: Professor, Medical Physics Laboratory, Medical School, National and Kapodistrian University of Athens

09/2011- 08/2017: Associate Professor, Medical Physics Laboratory, Medical School, National and Kapodistrian University of Athens

2006 – present: Consultant Medical Physicist, Medical Physics, Radiotherapy and Gamma Knife Departments, Hygeia Hospital, Athens

2006-2011: Assistant Professor, Medical Physics Laboratory, Medical School, National and Kapodistrian University of Athens

1999-2006: Medical Physicist, Medical Physics Department, Hygeia Hospital, Athens

1996-2003: Research fellow: Nuclear & Particle Physics Sec., Physics Dept., National and Kapodistrian University of Athens

**Teaching responsibilities**

* Medical Physics: undergraduate Medical students
* Physics of the human body: undergraduate Medical students
* Radiotherapy: postgraduate Medical Physics students (MSc course in Medical Physics)
* Radiation Protection: IAEA Regional postgraduate courses on radiation protection and the safety of radiation sources (2010, 2014, 2019)
* Computer applications in intensive care units and contemporary surgery techniques: Postgraduate Medical students in the corresponding M.Sc. programs
* Lectures in 30 educational seminars
* Supervisor in 45 MSc thesis in Medical Physics
* Supervisor in 10 PhD thesis in Medical Physics

#### Professional Service

* Director of the Inter-University (5 Medical Schools from five Greek Universities) postgraduate course in "Medical and Radiation Physics”, Greece
* Member of the Board of Directors of the [Institute of Accelerating Systems & Applications (IASA)](http://www.iasa.gr/), Greece
* Member of various Institutional Committees
* Member of the Educational Committee of the Hellenic Association of Medical Physicists
* Member of the Program or Scientific Committee in 11 Scientific Conferences, Workshops and Meetings
* Referee in 8 international scientific journals
* Reviewer of grant proposals for national and international bodies

**Research Interests**

* Quality assurance in advanced radiotherapy applications
* Conventional (TLD, diode, film) and contemporary (3D polymer gel-MRI) experimental dosimetry in modern radiation therapy techniques, such us Intensity Modulated Radiation Therapy (IMRT), high dose rate brachytherapy and stereotactic radiotherapy- radiosurgery
* Development of phantoms and methods for the assesment and correction of geometric distortion in MRI images used for radiotherapy applications
* Comparison and evaluation of modern radiotherapy techniques using physical and biological parameters
* Monte Carlo modelling of brachytherapy sources for the generation of dosimetry data for use in treatment planning systems and development of analytical dosimetry models guided by Monte Carlo simulation: data for 4 different sources have been incorporated in corresponding treatment planning systems and used in brachytherapy applications worldwide (publications 53,54,60,63)
* Monte Carlo simulations of high energy x-rays and charge particles for radiotherapy purposes

**Participation in research projects (2008 – present)**

* “Independent verification of the dose calculation algorithms implemented in the GammaPlan Treatment Planning System”

Budget: 30.000€. Source: ELEKTA Instrument AB, Sweden. Start-end: 2018 – 2019 (Coordinator)

* “Development of advanced tools dor quality assurance and optimization in streotactic radiosurgery-radiotherapy applications”

Budget: 50.000€. Source: State Scholarships Foundation of Greece through the program “Research Projects for Excellence IKY/SIEMENS”. Start-end: 2015 – 2017 (Coordinator)

* “Development of phantoms and methods for the assesment and correction of geometric distortion in MRI images used for radiotherapy applications”

Budget: 50.000€. Source: Intamural Research Fund. King Fahad Medical City Academic &Training Affairs Research & Scientific Publication. Start-end: 2015 – 2016

* “Prospective evaluation and end-user oriented tools to guide the brachytherapy community through a smooth transition to model based, individualized treatment planning dosimetry”

Budget: 350.000€. Source: Research Funding Program: Aristeia, co-financed by the European Social Fund ESF and Greek national funds through an Operational Program of the National Strategic Reference Framework-NSRF. Start-end: 2013 – 2016

* “3D Dosimetry in modern radiotherapy applications”

Budget: 45.000€. Source: "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: Heracleitus II. Investing in knowledge society through the European Social Fund. Start-end: 2010 – 2012 (Coordinator)

* “Development of dosimetric methods in modern radiation medical applications”

Budget: 9.000€. Source: Greek National Central Council of Health. Start-end: 2010 – 2012 (Coordinator)

* “Research proposal for the independent validation of Acuros based dosimetry calculations in brachytherapy”.

Budget: 67.850€. Source: Varian Medical Systems SA. (funding was managed by the Special Account of Research Grants of the University of Athens). Start-end: 2008-2011.

* Dosimetry in medical applications”

Budget: ~9.000€. Source: Special Research Account of the University of Athens (ELKE 70/4/4285, 70/4/3312, 70/4/3320). Start-end: 2006- 2012) (Coordinator)

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

Budget: 184.177€. 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 (Coordinator for Greece)

**Reviewer**

* Medical Physics (also Associate Editor), Physics in Medicine & Biology, Radiotherapy and Oncology, Journal of Applied Clinical Medical Physics, Physica Medica
* Abstract reviewer for ESTRO 36 and 37 conferences

**Published work**

* 92 publications in Peer Reviewed International Journals,

Total Impact Factor: 210

h-index :27, citations:1702 (Source: Scopus Citation Overview, February 2019)

h-index: 31, citations:2318 (Source: Google Scholar, January 2019)

* 105 abstracts/presentations in international conferences
* 41 invited talks in national (35) and international (6) conferences-meetings

**List of publications**

1. Pappas EP, Seimenis I, Dellios D,Kollias G, Lampropoulos KI, Karaiskos P, “Assessment of sequence dependent geometric distortion in contrast-enhanced MR images employed in stereotactic radiosurgery treatment planning”, Phys Med Biol. 63, 162-169 (2018)
2. Triantopoulou S, Platoni K, Antypas C, Karaiskos P, Armpilia C, Uzunoglou N, Kouloulias V, “Quality assurance protocol for superficial and deep hyperthermia systems established by the Hellenic Association of Medical Physicists (HAMP) in cooperation with the Hellenic Society of Oncologic Hyperthemia (HSOH): A study based on European Society for Hyperthermic Oncology (ESHO) quality assurance guidelines”, [Journal of B.U.ON.](https://www.scopus.com/sourceid/28749?origin=recordpage) 23, 494-499 (2018)
3. E P Pappas, D Dellios, I Seimenis, A Moutsatsos, E Georgiou and P Karaiskos, “Review and comparison of geometric distortion correction schemes in MR images used in stereotactic radiosurgery applications”, Journal of Physics: Conference Series 931,  Article number 012031 (2017)
4. Prentou G, Koutsouveli E, Pantelis E, Papagiannis P, Georgiou E, Karaiskos P, “Influence of multiple brain metastases' size and number on the quality of SRS-VMAT dose delivery”,  Journal of Physics: Conference Series 931, Article number 012022 (2017)
5. Pappas EP, Peppa V, Hourdakis CJ, Karaiskos P, Papagiannis P, “On the use of a novel Ferrous Xylenol-orange gelatin dosimeter for HDR brachytherapy commissioning and quality assurance testing”, Phys Med 45, 162-169 (2018)
6. [Pappas E P](https://www.scopus.com/authid/detail.uri?authorId=54680536900&amp;eid=2-s2.0-85039439034), [Alshanqity M](https://www.scopus.com/authid/detail.uri?authorId=54997986000&amp;eid=2-s2.0-85039439034), [Moutsatsos A](https://www.scopus.com/authid/detail.uri?authorId=27867925600&amp;eid=2-s2.0-85039439034), [Lababidi H](https://www.scopus.com/authid/detail.uri?authorId=57200089456&amp;eid=2-s2.0-85039439034), [Alsafi, K](https://www.scopus.com/authid/detail.uri?authorId=35239893700&amp;eid=2-s2.0-85039439034), [Georgiou K](https://www.scopus.com/authid/detail.uri?authorId=57194035936&amp;eid=2-s2.0-85039439034), [Karaiskos P](https://www.scopus.com/authid/detail.uri?authorId=6603836142&amp;eid=2-s2.0-85039439034), [Georgiou E](https://www.scopus.com/authid/detail.uri?authorId=7004603021&amp;eid=2-s2.0-85039439034), “MRI-Related Geometric Distortions in Stereotactic Radiotherapy Treatment Planning: Evaluation and Dosimetric Impact”, [Technol Cancer Res](https://www.scopus.com/sourceid/13158?origin=recordpage) Treat 16, 1120-1129 (2017)
7. Zoros E, Moutsatsos A, Pappas EP, Georgiou E, Kollias G, Karaiskos P, Pantelis E. "Monte Carlo and experimental determination of correction factors for gamma knife perfexion small field dosimetry measurements., Phys Med Biol. 62, 7532-7555 (2017)
8. Peppa V, Pappas EP, Karaiskos P, Papagiannis P. “Time resolved dose rate distributions in brachytherapy” Phys Med. 41, 13-19 (2017)
9. Pappas EP, Zoros E, Moutsatsos A, Peppa V, Zourari K, Karaiskos P, Papagiannis P. “On the experimental validation of model-based dose calculation algorithms for192Ir HDR brachytherapy treatment planning”, Phys Med Biol. 62, 4160-4182 (2017).
10. Peppa V, Pappas EP, Karaiskos P, Major T, Polgár C, Papagiannis P, “Dosimetric and radiobiological comparison of TG-43 and Monte Carlo calculations in 192Ir breast brachytherapy applications”, Phys Med. 32, 1245-1251 (2016)
11. Pappas EP, Seimenis I, Moutsatsos A, Georgiou E, Nomikos P, Karaiskos P “Characterization of system-related geometric distortions in MR images employed in Gamma Knife radiosurgery applications”, Phys Med Biol. 61, 6993-7011 (2016).
12. Torrens M, Malamitsi J, Karaiskos P, Valotassiou V, Laspas F, Andreou J, Stergiou C, Prassopoulos V, “[Although Non-diagnostic Between Necrosis and Recurrence, FDG PET/CT Assists Management of Brain Tumours After Radiosurgery](https://www.ncbi.nlm.nih.gov/pubmed/27381617)”, In Vivo. 30, 513-20 (2016).
13. Karachristou I, Karakosta M, Pantelias A, Hatzi V, Pantelias G, Thanassoulas A, Karaiskos P, Dimitriou P, Terzoudi GI, “Biodosimetry for High-Dose Exposures Based on Dicentric Analysis in Lymphocytes Released from the G2-Block by Caffeine”, Radiat Prot Dosimetry. 172, 230-237 (2016)
14. Pappas EP , [Moutsatsos A](http://www.ncbi.nlm.nih.gov/pubmed/?term=Moutsatsos%20A%5BAuthor%5D&cauthor=true&cauthor_uid=26788618), [Pantelis E](http://www.ncbi.nlm.nih.gov/pubmed/?term=Pantelis%20E%5BAuthor%5D&cauthor=true&cauthor_uid=26788618), [Zoros E](http://www.ncbi.nlm.nih.gov/pubmed/?term=Zoros%20E%5BAuthor%5D&cauthor=true&cauthor_uid=26788618), [Georgiou E](http://www.ncbi.nlm.nih.gov/pubmed/?term=Georgiou%20E%5BAuthor%5D&cauthor=true&cauthor_uid=26788618), [Torrens M](http://www.ncbi.nlm.nih.gov/pubmed/?term=Torrens%20M%5BAuthor%5D&cauthor=true&cauthor_uid=26788618), [Karaiskos P](http://www.ncbi.nlm.nih.gov/pubmed/?term=Karaiskos%20P%5BAuthor%5D&cauthor=true&cauthor_uid=26788618), “On the development of a comprehensive MC simulation model for the Gamma Knife Perfexion radiosurgery unit, [Phys Med Biol.](http://www.ncbi.nlm.nih.gov/pubmed/26788618) 61, 1182-203 (2016)
15. Pantelis E, Zourari K, Zoros E, Lahanas V, Karaiskos P, Papagiannis P, “On source models for (192)Ir HDR brachytherapy dosimetry using model based algorithms”, Phys Med Biol. 61, 4235-46 (2016)
16. Kouloulias V, Zygogianni A, Kouvaris J, Platoni K, Georgakopoulos J, Boviatsis E, Beli I, Tolia M, Antypas C, Karaiskos P, Scarleas C, Asimakopoulos C, Pantelakos P, Kelekis N, “Hypofractionated irradiation for gliomas with 45.5Gy in 13 fractions: a retrospective study”, J Neurosurg Sci. 59, 447-53 (2015)
17. Karachristou I, Karakosta, M, [Pantelias A](http://www.scopus.com/authid/detail.url?authorId=56716158900&amp;eid=2-s2.0-84936797593), Hatzi V I., [Karaiskos P](http://www.scopus.com/authid/detail.url?authorId=6603836142&amp;eid=2-s2.0-84936797593), Dimitriou P, [Pantelias G](http://www.scopus.com/authid/detail.url?authorId=6701716181&amp;eid=2-s2.0-84936797593), [Terzoudi G I](http://www.scopus.com/authid/detail.url?authorId=6602602924&amp;eid=2-s2.0-84936797593" \o "Show Author Details), “Triage biodosimetry using centromeric/telomeric PNA probes and Giemsa staining to score dicentrics or excess fragments in non-stimulated lymphocyte prematurely condensed chromosomes”, [Mutation Research - Genetic Toxicology and Environmental Mutagenesis](http://www.scopus.com/source/sourceInfo.url?sourceId=18968&origin=recordpage),   793, 107-14 (2015)
18. Andreou M, [Karaiskos P](http://www.scopus.com/authid/detail.url?authorId=6603836142&amp;eid=2-s2.0-84893482474), [Kordolaimi S](http://www.scopus.com/authid/detail.url?authorId=52364342600&amp;eid=2-s2.0-84893482474), [Koutsouveli E](http://www.scopus.com/authid/detail.url?authorId=6505481149&amp;eid=2-s2.0-84893482474), Sandilos P, [Dimitriou P](http://www.scopus.com/authid/detail.url?authorId=7003518469&amp;eid=2-s2.0-84893482474), [Dardoufas C](http://www.scopus.com/authid/detail.url?authorId=9247828300&amp;eid=2-s2.0-84893482474), [Georgiou E](http://www.scopus.com/authid/detail.url?authorId=56025610900&amp;eid=2-s2.0-84893482474), “Anatomy- vs. fluence-based planning for prostate cancer treatments using VMAT” [Physica Medica](http://www.scopus.com/source/sourceInfo.url?sourceId=17037&origin=recordpage) 30, 202-208 (2014)
19. [Papagiannis P](http://www.scopus.com/authid/detail.url?authorId=6701773720&amp;eid=2-s2.0-84907486526), [Pantelis E](http://www.scopus.com/authid/detail.url?authorId=6602366817&amp;eid=2-s2.0-84907486526), [Karaiskos P](http://www.scopus.com/authid/detail.url?authorId=6603836142&amp;eid=2-s2.0-84907486526), “Current state of the art brachytherapy treatment planning dosimetry algorithms” [British Journal of Radiology](http://www.scopus.com/source/sourceInfo.url?sourceId=16576&origin=recordpage) 87, 20140163 (2014)
20. Papamichail D, Pantelis E, Papagiannis P, Karaiskos P, and E Georgiou, “AWeb Simulation of Medical Image Reconstruction and Processing as an Educational Tool” J Digit Imaging 28, 24–31 (2015)
21. Kouloulias V, Triantopoulou S, Vrouvas J, Gennatas K, Ouzounoglou N, Kouvaris J, Karaiskos P, Aggelakis P, Antypas C, Zygogianni A, Papavasiliou K, Platoni K, Kelekis N, “Combined chemoradiotherapy with local microwave hyperthermia for treatment of T3N0 laryngeal carcinoma: a retrospective study with long-term follow-up”, ACTA Otorhinolaryngol Ital 34, 167-173 (2014)
22. Karaiskos P, Moutsatsos A, Pappas E, Georgiou E, Roussakis A, Torrens M, Seimenis I, “A simpe and efficient methodology to improve geometric accuracy in gamma knife radiation surgery: implementation in multiple brain metastases” Int J Radiat Oncol Biol Phys 90,1234-41 (2014)
23. Moutsatsos A, Karaiskos P, Petrokokkinos L, Sakelliou L, Pantelis E, Georgiou E, Torrens M, Seimenis I, “Assessment and characterization of the total geometric uncertainty in Gamma Knife radiosurgery using polymer gels” Med Phys. (2013), 40(3):031704. doi: 10.1118/1.4789922
24. Kouloulias V, Triantopoulou S, Efstathopoulos E, Platoni K, Kouvaris J, Uzunoglou N, Antypas C,Karaiskos P, Aggelakis P, Vrouvas J, Kelekis N, “Microwave hyperthermia in conjunction with radiotherapy in superficial tumours: Correlation of thermal parameters with tumour regression”, West Indian Med J. 2013 Nov;62(8):752-7. doi: 10.7727/wimj.2012.328.
25. Zourari K, Pantelis E, Moutsatsos A, Sakelliou L, Georgiou E, Karaiskos P, Papagiannis P, “Dosimetric accuracy of a deterministic radiation transport based (192)Ir brachytherapy treatment planning system. Part III. Comparison to Monte Carlo simulation in voxelized anatomical computational models”, Med Phys. (2013), 40(1):011712. doi: 10.1118/1.4770275.
26. Pantelis E, Moutsatsos A, Zourari K, Petrokokkinos L, Sakelliou L, Kilby W, Antypas C, Papagiannis P, Karaiskos P, Georgiou E and Seimenis I, “On the output factor measurements of the CyberKnife iris collimator small fields: Experimental determination of the k(Q(clin),Q(msr) ) (f(clin),f(msr) ) correction factors for microchamber and diode detectors”, Med. Phys. 39, 4875-85 (2012)
27. [Kantemiris](http://www.scopus.com/authid/detail.url?authorId=27867833300&eid=2-s2.0-82755181820) I, [Karaiskos P](http://www.scopus.com/authid/detail.url?authorId=35364105800&eid=2-s2.0-82755181820), [Papagiannis P](http://www.scopus.com/authid/detail.url?authorId=6701773720&eid=2-s2.0-82755181820) and [Angelopoulos A.](http://www.scopus.com/authid/detail.url?authorId=35727539100&eid=2-s2.0-82755181820) “Dose and dose averaged LET comparison of 1H, 4He, 6Li, 8Be, 10B, 12C, 14N, and 16O ion beams forming a spread-out Bragg peak” Med. Phys. 38, 6585-91 (2011)
28. Tzikas A, Karaiskos P, Papanikolaou N, Sandilos P, Koutsouveli E, Lavdas E, Scarleas C, Dardoufas K, Lind BK and Mavroidis P “Investigating the Clinical Aspects of Using CT vs. CT-MRI Images During Organ Delineation and Treatment Planning in Prostate Cancer Radiotherapy”, Technol Cancer Res Treat. 10, 231-42 (2011)
29. Chatzigiannis C, Lymperopoulou G, Sandilos P, Dardoufas C, Yakoumakis E, Georgiou E and Karaiskos P, “Dose perturbation in the radiotherapy of breast cancer patients implanted with the MAGNA SITETM: A Monte Carlo study”, J Appl Clin Med Phys 19, 3295-304 (2011)
30. Petrokokkinos L, Zourari K, Pantelis E, Moutsatsos A, Karaiskos P, Sakelliou L, Seimenis I, Georgiou E and Papagiannis P, “Dosimetric accuracy of a deterministic radiation transport based 192Ir brachytherapy treatment planning system. Part II: Monte Carlo and experimental verification for multiple source dwell position plans employing shielded applicators”, Med. Phys. 38, 1981-1992 (2011)
31. Dimitriadis A, Gialousis G, Makri T, Karlatira M, Karaiskos P, Georgiou E, Papaodysseas S, Yakoumakis E, “Monte Carlo estimation of radiation doses during paediatric barium meal and cystourethrography examinations”, Phys Med Biol. 56, 367-82 (2011)
32. [Pantelis E](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6602366817), [Moutsatsos A](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=27867925600), [Zourari K](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=35365729500), [Kilby W](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=16550030100), [Antypas C](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6603305554), [Papagiannis P](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6701773720), [Karaiskos P](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=35364105800), E Georgiou, W Kilby, C. Antypas and L. Sakelliou, “[On the implementation of a recently proposed dosimetric formalism to a robotic radiosurgery system](http://www.scopus.com/record/display.url?eid=2-s2.0-77952325580&origin=resultslist&sort=plf-f&src=s&st1=Karaiskos+P&nlo=&nlr=&nls=&sid=maTVz28zSce-OHl0-OFHvjb%3a30&sot=b&sdt=b&sl=24&s=AUTHOR-NAME%28Karaiskos+P%29&relpos=0&relpos=0)”, [Med Phys](http://www.scopus.com/source/sourceInfo.url?sourceId=17871&origin=resultslist) 37, 2369-3279 (2010)
33. [Bassler, N.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6507950061), [Kantemiris, I.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=35490466100), [Karaiskos, P.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=35364105800), [Engelke, J.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=36193542200), [Holzscheiter, M.H.](http://www.scopus.com/authid/detail.url?origin=resultslist&authorId=6701710488), “[Comparison of optimized single and multifield irradiation plans of antiproton, proton and carbon ion beams](http://www.scopus.com/record/display.url?eid=2-s2.0-77950335334&origin=resultslist&sort=plf-f&src=s&st1=Karaiskos+P&sid=maTVz28zSce-OHl0-OFHvjb%3a30&sot=b&sdt=b&sl=24&s=AUTHOR-NAME%28Karaiskos+P%29&relpos=1&relpos=1)” [Radioth Oncol](http://www.scopus.com/source/sourceInfo.url?sourceId=17876&origin=resultslist) 95, 87-93 (2010)
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35. Zourari K, Pantelis E, Moutsatsos A, Petrokokkinos L, Karaiskos P, Sakelliou L, Georgiou E, Papagiannis P, [Dosimetric accuracy of a deterministic radiation transport based 192Ir brachytherapy treatment planning system. Part I: single sources and bounded homogeneous geometries](http://www.ncbi.nlm.nih.gov/pubmed/20229874), Med Phys 37, 649-61 (2010)
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