

Dr. George C. Kagadis

Current position: Professor of Medical Physics and Medical Informatics (with Tenure)

Personal Data:

Date of Birth: February 19th, 1973

Place of Birth: Chania, Crete

Nationality: Greek, Australian

Marital Status: Married, two children

Spoken Languages: Greek, English

Education:

September 96: Diploma in Physics from the University of Athens, Greece

October 98: MSc in Medical Physics from the University of Patras, Greece.

February 2002: PhD in Medical Physics under the title: "Design and implementation of medical image registration and fusion algorithms"

Publications:

1. 100 papers in scientific peer review journals
2. 2 edited books 'Informatics in Medical Imaging' and 'Handbook of Small Animal Imaging: Preclinical Imaging, Therapy, and Applications' published by Taylor & Francis
3. 14 book chapters in scientific books

Congresses – Lectures:

Participation with presentations in more than 50 international congresses, workshops, etc. and invited speaker or participant on many occasions in international meetings.

Organization member:

- Member of the Board of Editors Medical Physics
- Member of the Board of Editors Physica Medica: European Journal of Medical Physics
- American Association of Physicists in Medicine (AAPM)
- AAPM Website Editor
- Chairman of the Electronic Media Coordinating Committee
- Chairman of the AAPM Website Editorial Board
- Member of the AAPM International Affairs Committee
- Member of the AAPM History Committee
- Member of the AAPM Electronic Media Coordinating Committee
- Member of the AAPM International Scientific Exchange Programs Subcommittee
- Member of the AAPM Newsletter Editorial Board
- Member of the AAPM Placement Service Subcommittee
- Chairman of the AAPM European Affairs Subcommittee
- Member of the AAPM Equipment Donation Program Subcommittee
- Member of the AAPM Workgroup in Information Technology
- Member of the AAPM Online learning Services Subcommittee
- Member of the AAPM Molecular Imaging in Radiation Oncology Workgroup
- Radiological Society of North America (RSNA)
- European Congress of Radiology (ECR)

Individual Appointments – Contribution to Editorial Boards:

1. Associate Editor for Medical Physics (2006 –)
2. Associate Editor for Physica Medica: European Journal of Medical Physics (2016 –)
3. Referee for Physics in Medicine and Biology (2007, 2008), Journal of Digital Imaging (2007, 2008), BMC Medical Imaging (2007), Biomedical Engineering on line (2007), Measurement Science Technology (2007), European Journal of Radiology (2008, 2011, 2013), Annals of Biomedical Engineering (2011), Current Medicinal Chemistry (2013), Reviewer for newly published books for Medical Physics Journal, Referee for SCAR 2006, ICIP 2006, 2007, International Conference on Imaging and Graphics 2004 (ICIG 2004).

Contribution to National and International Research Projects:

The following is a list of recent research projects that I have participated:

10/2003-12/2005: “IST-2001-38911: Self organized societies of connectionist intelligent agents capable of learning”.

01/2005-12/2006: “In vivo study of angiogenesis in the hindlimb ischemia model”. Research Program PYTHAGORAS II.

06/2005-05/2006: “In vivo imaging and quantitative analysis of angiogenesis in animal models with the application of sophisticated image processing and analysis algorithms” sponsored Cardiovascular and Interventional Radiological Society of Europe (CIRSE Research Grant 2005).

01/2006-12/2008: “Computational fluid dynamic studies for the follow up of renal artery stenoses. Application to the New Zealand white rabbit model” sponsored by research project “Karatheodoris”.

12/2003-12/2007: “HEARTS: Home-based Everyday Activities Analysis and Response Telecare System” sponsored by the Greek Secretary of Research and Technology.

01/2010-12/2011: GREECE-FRANCE Joint Research and Technology Programs, ‘Development of realistic computational models for the optimization of diagnostic and therapeutic protocols’

02/2009- 06/2011: Intrauniversity research network ANGIO

09/2010-08/2013: Iraklitos II: "Molecular imaging methodologies with radiolabeled nanoparticles for the quantitative evaluation of angiogenesis spatial distribution in malignant tumors" sponsored by the Greek Ministry of Education €45,000 (PI); 9/2010-8/2013.

02/2011-01/2014: Karatheodori 2010: "Angiogenesis spatial distribution in a diabetic model of New Zealand rabbit hindlimb ischemia with the aid of molecular imaging" sponsored by University of Patras € 33,000 (PI); 2/2011-1/2014.

01/2016-12/2019: H2020-MSCA-RISE-2014 ERROR: A pEdiatRic dosimetRy personalized platfORm based on computational anthropomorphic phantoms; sponsored by HORIZON 2020 €432,000 (PI). 01/2016 - 12/2019.

12/2019-11/2023: H2020-MSCA-RISE-2019 AERAS: A CybEr range tRaining platform for medicAl organisations and systems Security; sponsored by HORIZON 2020 €165,600 (co-PI); 12/2019 - 11/2023.

05/2020-04/2023: POPEYE: Personalized Optimization of Prognostic and thErapeutic protocols with Lu-177 for MNETs, through the development of advanced computational tools and a portable detection sYstEm; sponsored by ERA PerMed Joint Transnational Call for Proposals (JTC) 2019 on "Personalised Medicine: Multidisciplinary Research Towards Implementation" €131,120 (PI); 01/2020 - 12/2022.

Distinctions:

- Scholarship from the Greek State Scholarship Foundations as the best second year postgraduate student for the MSc course on Medical Physics (1998).
- Scholarship from the Greek State Scholarship Foundations for post-doctoral research (01/2005-6/2006).
- Fulbright Research Scholarship (Fulbright – Hays Act, Public Law 256, the 87th Congress) 23/6/2010 to 23/8/2010 to Mayo Clinic, Department of Radiology. Research title: 'Advancing the features for the "Dose Repository for CT examinations"'.
• Erasmus+ International Credit Mobility KA107 Program traineeship to The University of Texas, MD Anderson Cancer Center, Department of Imaging Physics May 21 – 25, 2018.

Selected Publications:

1. Kostou T, Papadimitroulas P, Papaconstadopoulos P, Devic S, Seuntjens J, **Kagadis GC**. Size-specific dose estimations for pediatric chest, abdomen/pelvis and head CT scans with the use of GATE. *Phys Med*. 2019;65:181–190. doi:10.1016/j.ejmp.2019.08.020
2. Gatos I, Tsantis S, Spiliopoulos S, Karnabatidis D, Theotokas I, Zoumpoulis P, Loupas T, Hazle JD, **Kagadis GC**. Temporal stability assessment in shear wave elasticity images validated by deep learning neural network for chronic liver disease fibrosis stage assessment. *Med Phys*. 2019 May;46(5):2298-2309. doi: 10.1002/mp.13521.
3. Chatzipapas KP, Papadimitroulas P, Obeidat M, McConnell KA, Kirby N, Loudos G, Papanikolaou N, **Kagadis GC**. Quantification of DNA double-strand breaks using Geant4-DNA. *Med Phys*. 2019 Jan;46(1):405-413. doi: 10.1002/mp.13290.
4. Papadimitroulas P, Erwin WD, Iliadou V, Kostou T, Loudos G, **Kagadis GC**. A personalized, Monte Carlo-based method for internal dosimetric evaluation of radiopharmaceuticals in children. *Med Phys*. 2018 Jun 19. doi: 10.1002/mp.13055.
5. Gatos I, Tsantis S, Spiliopoulos S, Karnabatidis D, Theotokas I, Zoumpoulis P, Loupas T, Hazle JD, **Kagadis GC**. 'A Machine-Learning Algorithm Toward Color Analysis for Chronic Liver Disease Classification, Employing Ultrasound Shear Wave Elastography.' *Ultrasound Med Biol*. 2017 Sep;43(9):1797-1810. doi: 10.1016/j.ultrasmedbio.2017.05.002.
6. Gatos I, Tsantis S, Karamesini M, Spiliopoulos S, Karnabatidis D, Hazle JD, **Kagadis GC**. 'Focal liver lesions segmentation and classification in nonenhanced T2-weighted MRI.' *Med Phys*. 2017 Jul;44(7):3695-3705. doi: 10.1002/mp.12291.
7. Gatos I, Tsantis S, Spiliopoulos S, Karnabatidis D, Theotokas I, Zoumpoulis P, Loupas T, Hazle JD, **Kagadis GC**. 'A new computer aided diagnosis system for evaluation of chronic liver disease with ultrasound shear wave elastography imaging' *Med Phys* 2016;43(3):1428-36. doi: 10.1118/1.4942383.
8. Kostou T, Papadimitroulas P, Loudos G, **Kagadis GC**. 'A preclinical simulated dataset of S-values and investigation of the impact of rescaled organ masses using the MOBY phantom' *Phys Med Biol* 2016;61(6):2333-55. doi: 10.1088/0031-9155/61/6/2333.
9. Gatos I, Tsantis S, Spiliopoulos S, Skouroliaou A, Theotokas I, Zoumpoulis P, Hazle JD, **Kagadis GC**. 'A new automated quantification algorithm for the detection and evaluation of focal liver lesions with contrast-enhanced ultrasound' *Med Phys* 2015;42(7): 3948-59.
10. Tsiapa I, Efthimiadou EK, Fragogeorgi E, Loudos G, Varvarigou AD, Bouziotis P, Kordas GC, Mihailidis D, Nikiforidis GC, Xanthopoulos S, Psimadas D, Paravatou-Petsotas M, Palamaris L, Hazle JD, **Kagadis GC**. '(99m)Tc-labeled aminosilane-coated iron oxide nanoparticles for molecular imaging of $\alpha\beta$ 3-mediated tumor expression and feasibility for hyperthermia treatment.' *J Colloid Interface Sci*. 2014 Nov 1;433:163-75. doi: 10.1016/j.jcis.2014.07.032.
11. Tsiapa I, Loudos G, Fragogeorgi EA, Bouziotis P, Psimadas D, Xanthopoulos S, Paravatou-Petsotas M, Palamaris L, Varvarigou AD, Karnabatidis D, **Kagadis GC**. 'Evaluation of $\alpha\beta$ 3-mediated tumor expression with a 99mTc-labeled ornithine-modified RGD derivative during glioblastoma growth in vivo.' *Cancer Biother Radiopharm*. 2014 Dec;29(10):444-50. doi: 10.1089/cbr.2014.1672.
12. Stavros Tsantis, Stavros Spiliopoulos, Aikaterini Skouroliaou, Dimitris Karnabatidis, John D. Hazle, **George C. Kagadis** 'Multiresolution Edge Detection Using Enhanced Fuzzy C-Means Clustering for Ultrasound Image Speckle Reduction' *Med Phys* 2014;41(7): 072903 (11pp).

13. George Bourantas, Mehdi Ghommem, **George C. Kagadis**, Kotsantinos Katsanos, Vassilis C. Loukopoulos, Vasilis N. Burganos, George C. Nikiforidis 'Real-time tumor ablation simulation based on the dynamic mode decomposition method' *Med Phys* 2014;41(5): 053301 (11pp).
14. Panagiotis Papadimitroulas, George Loudos, Amandine Le Maitre, Mathieu Hatt, Florent Tixier, Nikos Efthimiou, George C. Nikiforidis, Dimitris Visvikis, **George C. Kagadis** 'Investigation of realistic PET simulations incorporating tumor patient's specificity using anthropomorphic models: Creation of an oncology database. *Med Phys* 2013;40(11):112506.
15. Kevin Moore, **George C. Kagadis**, Todd R. McNutt, Vitali Moiseenko, Sasa Mutic 'Automation and advanced computing in clinical radiation oncology' *Med Phys* 2014;41(1):010901 (13pp).
16. Michael T. Munley, **George C. Kagadis**, Kiaran P. McGee, Assen S. Kirov, Sunyoung Jang, Sasa Mutic, Robert Jeraj, Lei Xing, J. Daniel Bourland. 'An Introduction to Molecular Imaging in Radiation Oncology: A Report by the AAPM Working Group on Molecular Imaging in Radiation Oncology (WGMIR)'. *Med Phys* 2013;40(10):101501.
17. **George C. Kagadis**, Christos Kloukinas, Kevin Moore, Jim Philbin, Panagiotis Papadimitroulas, Christos Alexakos, Paul G. Nagy, Dimitris Visvikis, and William R. Hendee. 'Cloud Computing in medical imaging.' *Med Phys* 2013;40(7):070901.
18. Mandelias K, Tsantis S, Spiliopoulos S, Katsakiori PF, Karnabatidis D, Nikiforidis GC, **Kagadis GC**. 'Automatic quantitative analysis of in-stent restenosis using FD-OCT in vivo intra-arterial imaging.' *Med Phys* 2013;40(6):063101.
19. **Kagadis GC**, Walz-Flannigan A, Krupinski EA, Nagy PG, Katsanos K, Diamantopoulos A, Langer SG. 'Medical imaging displays and their use in image interpretation.' *Radiographics*. 2013 Jan-Feb;33(1):275-90.
20. Tsiapa I, Loudos G, Varvarigou A, Fragogeorgi E, Psimadas D, Tsotakos T, Xanthopoulos S, Mihailidis D, Bouziotis P, Nikiforidis GC, **Kagadis GC**. 'Biological evaluation of an ornithine-modified (99m)Tc-labeled RGD peptide as an angiogenesis imaging agent.' *Nucl Med Biol*. 2013;40(2):262-72.
21. **Kagadis GC**, Katsanos K, Karnabatidis D, Loudos G, Nikiforidis GC, Hendee WR. 'Emerging technologies for image guidance and device navigation in interventional radiology' *Med Phys*. 2012;39(9):5768-81.
22. Walz-Flannigan A, Babcock B, **Kagadis GC**, Wang J, Langer SG. 'Human contrast-detail performance with declining contrast.' *Med Phys*. 2012;39(9):5446-56.
23. Papadimitroulas P, Loudos G, Nikiforidis GC, **Kagadis GC**. 'A dose point kernel database using GATE Monte Carlo simulation toolkit for nuclear medicine applications: comparison with other Monte Carlo codes.' *Med Phys*. 2012;39(8):5238-47.
24. Messaris GA, Abatzis I, **Kagadis GC**, Samartzis AP, Athanasopoulou P, Christeas N, Katsanos K, Karnabatidis D, Nikiforidis GC. 'Hysterosalpingography using a flat panel unit: evaluation and optimization of ovarian radiation dose' *Med Phys*. 2012; 39(7):4404-13.
25. Tsantis S, **Kagadis GC**, Katsanos K, Karnabatidis D, Bourantas G, Nikiforidis GC. 'Automatic vessel lumen segmentation and stent strut detection in intravascular optical coherence tomography' *Med Phys*. 2012 Jan;39(1):503-513.
26. **Kagadis GC**, Alexakos C, Langer SG, French T. 'Using an Open-Source PACS Virtual Machine for a Digital Angiography Unit: Methods and Initial Impressions' *J Digit Imaging* 2012 Feb;25(1):81-90.
27. **George C. Kagadis**, George Loudos, Konstantinos Katsanos, Steve G. Langer, George C. Nikiforidis 'In vivo small animal imaging, *Med Phys*. 2010 Dec;37(12):6421-42.
28. Loudos G, **Kagadis GC**, Psimadas D. 'Current status and future perspectives of in vivo small animal imaging using radiolabeled nanoparticles'. *Eur J Radiol* 2011; 78(2):287-95.
29. **George C. Kagadis**, Eugene D. Skouras, George C. Bourantas, Christakis Paraskeva, Konstantinos Katsanos, Dimitris Karnabatidis, George C. Nikiforidis. 'Computational representation and hemodynamic characterization of in vivo acquired severe stenotic renal artery geometries using turbulence modelling' *Medical Engineering & Physics* 2008; 30(5) pp. 647-660.