Stephen J Mcmahon

List of Publications by Year
in descending order

83 papers	4,490 citations	117625 34 h-index	106344 65 g-index
84 all docs	84 docs citations	84 times ranked	4128 citing authors

#	Article	IF	Citations
1	Cell-Specific Radiosensitization by Gold Nanoparticles at Megavoltage Radiation Energies. International Journal of Radiation Oncology Biology Physics, 2011, 79, 531-539.	0.8	388
2	Physical basis and biological mechanisms of gold nanoparticle radiosensitization. Nanoscale, 2012, 4, 4830.	5.6	376
3	Biological consequences of nanoscale energy deposition near irradiated heavy atom nanoparticles. Scientific Reports, 2011, 1, 18.	3.3	335
4	The linear quadratic model: usage, interpretation and challenges. Physics in Medicine and Biology, 2019, 64, 01TR01.	3.0	224
5	Roadmap to Clinical Use of Gold Nanoparticles for Radiation Sensitization. International Journal of Radiation Oncology Biology Physics, 2016, 94, 189-205.	0.8	182
6	Relative Biological Effectiveness Variation Along Monoenergetic and Modulated Bragg Peaks of a 62-MeV Therapeutic Proton Beam: A Preclinical Assessment. International Journal of Radiation Oncology Biology Physics, 2014, 90, 27-35.	0.8	178
7	Nanodosimetric effects of gold nanoparticles in megavoltage radiation therapy. Radiotherapy and Oncology, 2011, 100, 412-416.	0.6	174
8	Radiotherapy in the presence of contrast agents: a general figure of merit and its application to gold nanoparticles. Physics in Medicine and Biology, 2008, 53, 5635-5651.	3.0	173
9	Cell type-dependent uptake, localization, and cytotoxicity of 1.9 nm gold nanoparticles. International Journal of Nanomedicine, 2012, 7, 2673.	6.7	150
10	Comparing gold nano-particle enhanced radiotherapy with protons, megavoltage photons and kilovoltage photons: a Monte Carlo simulation. Physics in Medicine and Biology, 2014, 59, 7675-7689.	3.0	139
11	Imaging and radiation effects of gold nanoparticles in tumour cells. Scientific Reports, 2016, 6, 19442.	3.3	111
12	Biological modeling of gold nanoparticle enhanced radiotherapy for proton therapy. Physics in Medicine and Biology, 2015, 60, 4149-4168.	3.0	110
13	Roadmap for metal nanoparticles in radiation therapy: current status, translational challenges, and future directions. Physics in Medicine and Biology, 2020, 65, 21RM02.	3.0	101
14	The role of mitochondrial function in gold nanoparticle mediated radiosensitisation. Cancer Nanotechnology, 2014, 5, 5.	3.7	89
15	AGuIX^{Â®} from bench to bedsideâ€”Transfer of an ultrasmall theranostic gadolinium-based nanoparticle to clinical medicine. British Journal of Radiology, 2019, 92, 20180365.	2.2	86
16	A Quantitative Analysis of the Role of Oxygen Tension in FLASH Radiation Therapy. International Journal of Radiation Oncology Biology Physics, 2020, 107, 539-547.	0.8	84
17	Optimising element choice for nanoparticle radiosensitisers. Nanoscale, 2016, 8, 581-589.	5.6	80
18	Gold nanoparticle cellular uptake, toxicity and radiosensitisation in hypoxic conditions. Radiotherapy and Oncology, 2014, 110, 342-347.	0.6	72

#	Article	IF	Citations
19	Mechanistic Modelling of DNA Repair and Cellular Survival Following Radiation-Induced DNA Damage. Scientific Reports, 2016, 6, 33290.	3.3	72
20	Toward A variable RBE for proton beam therapy. Radiotherapy and Oncology, 2018, 128, 68-75.	0.6	71
21	Theranostic AGuIX nanoparticles as radiosensitizer: A phase I, dose-escalation study in patients with multiple brain metastases (NANO-RAD trial). Radiotherapy and Oncology, 2021, 160, 159-165.	0.6	67
22	Dependence of gold nanoparticle radiosensitization on cell geometry. Nanoscale, 2017, 9, 5843-5853.	5.6	61
23	A Kinetic-Based Model of Radiation-Induced Intercellular Signalling. PLoS ONE, 2013, 8, e54526.	2.5	55
24	Energy Dependence of Gold Nanoparticle Radiosensitization in Plasmid DNA. Journal of Physical Chemistry C, 2011, 115, 20160-20167.	3.1	50
25	A mechanistic study of gold nanoparticle radiosensitisation using targeted microbeam irradiation. Scientific Reports, 2017, 7, 44752.	3.3	50
26	A general mechanistic model enables predictions of the biological effectiveness of different qualities of radiation. Scientific Reports, 2017, 7, 10790.	3.3	50
27	Targeted Alpha Therapy: Current Clinical Applications. Cancer Biotherapy and Radiopharmaceuticals, 2020, 35, 404-417.	1.0	48
28	Mechanistic Modelling of Radiation Responses. Cancers, 2019, 11, 205.	3.7	47
29	LET-weighted doses effectively reduce biological variability in proton radiotherapy planning. Physics in Medicine and Biology, 2018, 63, 225009.	3.0	46
30	DNA Damage Responses following Exposure to Modulated Radiation Fields. PLoS ONE, 2012, 7, e43326.	2.5	44
31	Investigation of dose-rate effects and cell-cycle distribution under protracted exposure to ionizing radiation for various dose-rates. Scientific Reports, 2018, 8, 8287.	3.3	44
32	Dose, dose-rate and field size effects on cell survival following exposure to non-uniform radiation fields. Physics in Medicine and Biology, 2012, 57, 3197-3206.	3.0	43
33	Gold nanoparticle induced vasculature damage in radiotherapy: Comparing protons, megavoltage photons, and kilovoltage photons. Medical Physics, 2015, 42, 5890-5902.	3.0	43
34	A Computational Model of Cellular Response to Modulated Radiation Fields. International Journal of Radiation Oncology Biology Physics, 2012, 84, 250-256.	0.8	35
35	A parameter sensitivity study for simulating DNA damage after proton irradiation using TOPAS-nBio. Physics in Medicine and Biology, 2020, 65, 085015.	3.0	31
36	Small field dosimetry for the small animal radiotherapy research platform (SARRP). Radiation Oncology, 2017, 12, 204.	2.7	30

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37	Cellular Response to Proton Irradiation: A Simulation Study with TOPAS-nBio. Radiation Research, 2020, 194, 9.	1.5	30
38	A Robust Curve-Fitting Procedure for the Analysis of Plasmid DNA Strand Break Data from Gel Electrophoresis. Radiation Research, 2011, 175, 797-805.	1.5	28
39	Using the Proton Energy Spectrum and Microdosimetry to Model Proton Relative Biological Effectiveness. International Journal of Radiation Oncology Biology Physics, 2019, 104, 316-324.	0.8	28
40	Microbeam evolution: from single cell irradiation to pre-clinical studies. International Journal of Radiation Biology, 2018, 94, 708-718.	1.8	27
41	Cardiac sub-volume targeting demonstrates regional radiosensitivity in the mouse heart. Radiotherapy and Oncology, 2020, 152, 216-221.	0.6	26
42	<i>In-vitro</i>investigation of out-of-field cell survival following the delivery of conformal, intensity-modulated radiation therapy (IMRT) and volumetric modulated arc therapy (VMAT) plans. Physics in Medicine and Biology, 2012, 57, 6635-6645.	3.0	24
43	History and current perspectives on the biological effects of high-dose spatial fractionation and high dose-rate approaches: GRID, Microbeam & FLASH radiotherapy. British Journal of Radiology, 2020, 93, 20200217.	2.2	24
44	Impact of superparamagnetic iron oxide nanoparticles on in vitro and in vivo radiosensitisation of cancer cells. Radiation Oncology, 2021, 16, 104.	2.7	24
45	Cancer Cells Can Exhibit a Sparing FLASH Effect at Low Doses Under Normoxic In Vitro-Conditions. Frontiers in Oncology, 2021, 11, 686142.	2.8	22
46	Implications of Intercellular Signaling for Radiation Therapy: A Theoretical Dose-Planning Study. International Journal of Radiation Oncology Biology Physics, 2013, 87, 1148-1154.	0.8	20
47	Advances in modelling gold nanoparticle radiosensitization using new Geant4-DNA physics models. Physics in Medicine and Biology, 2020, 65, 225017.	3.0	18
48	Comment on â€˜Implications on clinical scenario of gold nanoparticle radiosensitization in regards to photon energy, nanoparticle size, concentration and locationâ€™. Physics in Medicine and Biology, 2012, 57, 287-290.	3.0	17
49	Preclinical Evaluation of Dose-Volume Effects and Lung Toxicity Occurring In and Out-of-Field. International Journal of Radiation Oncology Biology Physics, 2019, 103, 1231-1240.	0.8	17
50	Proton RBE models: commonalities and differences. Physics in Medicine and Biology, 2021, 66, 04NT02.	3.0	16
51	Relative biological effectiveness (RBE) and out-of-field cell survival responses to passive scattering and pencil beam scanning proton beam deliveries. Physics in Medicine and Biology, 2012, 57, 6671-6680.	3.0	15
52	Cellular signalling effects in high precision radiotherapy. Physics in Medicine and Biology, 2015, 60, 4551-4564.	3.0	15
53	Modelling responses to spatially fractionated radiation fields using preclinical image-guided radiotherapy. British Journal of Radiology, 2017, 90, 20160485.	2.2	14
54	An overview of current practice in external beam radiation oncology with consideration to potential benefits and challenges for nanotechnology. Cancer Nanotechnology, 2017, 8, 3.	3.7	12

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55	Intensity Modulated Radiation Fields Induce Protective Effects and Reduce Importance of Dose-Rate Effects. Scientific Reports, 2019, 9, 9483.	3.3	12
56	Proton relativeÂbiologicalÂeffectiveness (RBE): a multiscale problem. British Journal of Radiology, 2019, 92, 20180004.	2.2	11
57	A Brief Overview of the Preclinical and Clinical Radiobiology of Microbeam Radiotherapy. Clinical Oncology, 2021, 33, 705-712.	1.4	11
58	Time and Cell Type Dependency of Survival Responses in Co-cultured Tumor and Fibroblast Cells after Exposure to Modulated Radiation Fields. Radiation Research, 2015, 183, 656-664.	1.5	10
59	The Impact of Hypoxia on Out-of-Field Cell Survival after Exposure to Modulated Radiation Fields. Radiation Research, 2017, 188, 716-724.	1.5	10
60	A novel CBCT-based method for derivation of CTV-PTV margins for prostate and pelvic lymph nodes treated with stereotactic ablative radiotherapy. Radiation Oncology, 2017, 12, 124.	2.7	9
61	Patient Reported vs Claims Based Measures of Health for Modeling Life Expectancy in Men with Prostate Cancer. Journal of Urology, 2021, 205, 434-440.	0.4	9
62	Mechanistic Modeling of Radium-223 Treatment of Bone Metastases. International Journal of Radiation Oncology Biology Physics, 2019, 103, 1221-1230.	0.8	8
63	Inverse planned constant dose rate volumetric modulated arc therapy (VMAT) as an efficient alternative to five-field intensity modulated radiation therapy (IMRT) for prostate. Journal of Radiotherapy in Practice, 2014, 13, 68-78.	0.5	7
64	Impact of fractionation on out-of-field survival and DNA damage responses following exposure to intensity modulated radiation fields. Physics in Medicine and Biology, 2016, 61, 515-526.	3.0	7
65	Prostate cancer treated with brachytherapy; an exploratory study of dose-dependent biomarkers and quality of life. Radiation Oncology, 2017, 12, 53.	2.7	6
66	Predicting In Vitro Cancer Cell Survival Based on Measurable Cell Characteristics. Radiation Research, 2019, 191, 532.	1.5	6
67	Conventional in vivo irradiation procedures are insufficient to accurately determine tumor responses to non-uniform radiation fields. International Journal of Radiation Biology, 2015, 91, 257-261.	1.8	5
68	TOPAS a tool to evaluate the impact of cell geometry and radionuclide on alpha particle therapy. Biomedical Physics and Engineering Express, 2021, 7, 035008.	1.2	5
69	Dual effects of radiation bystander signaling in urothelial cancer: purinergic-activation of apoptosis attenuates survival of urothelial cancer and normal urothelial cells. Oncotarget, 2017, 8, 97331-97343.	1.8	5
70	Dose estimation after a mixed field exposure: Radium-223 and intensity modulated radiotherapy. Nuclear Medicine and Biology, 2022, 106-107, 10-20.	0.6	5
71	Evaluating Iodine-125 DNA Damage Benchmarks of Monte Carlo DNA Damage Models. Cancers, 2022, 14, 463.	3.7	5
72	Development of a portable hypoxia chamber for ultra-high dose rate laser-driven proton radiobiology applications. Radiation Oncology, 2022, 17, 77.	2.7	5

#	ARTICLE	IF	CITATIONS
73	Investigating the influence of respiratory motion on the radiation induced bystander effect in modulated radiotherapy. Physics in Medicine and Biology, 2013, 58, 8311-8322.	3.0	4
74	Oxygen enhancement ratios of cancer cells after exposure to intensity modulated x-ray fields: DNA damage and cell survival. Physics in Medicine and Biology, 2021, 66, 075014.	3.0	4
75	Characterization of a custom-made 241Am alpha-source for radiobiological studies. Applied Radiation and Isotopes, 2021, 177, 109931.	1.5	4
76	Using Process Algebra to Model Radiation Induced Bystander Effects. Lecture Notes in Computer Science, 2014, , 196-210.	1.3	4
77	Effects of Gadolinium MRI Contrast Agents on DNA Damage and Cell Survival when Used in Combination with Radiation. Radiation Research, 2020, 194, 298.	1.5	4
78	Investigating spatial fractionation and radiation induced bystander effects: a mathematical modelling approach. Physics in Medicine and Biology, 2021, 66, 225007.	3.0	4
79	A computational approach to quantifying miscounting of radiation-induced double-strand break immunofluorescent foci. Communications Biology, 2022, 5, .	4.4	4
80	High-dose femtosecond-scale gamma-ray beams for radiobiological applications. Physics in Medicine and Biology, 2022, 67, 085010.	3.0	3
81	Patient-reported Health Status, Comorbidity Burden, and Prostate Cancer Treatment. Urology, 2021, 149, 103-109.	1.0	2
82	RadSigBench: a framework for benchmarking functional genomics signatures of cancer cell radiosensitivity. Briefings in Bioinformatics, 2022, 23, .	6.5	1
83	Variance reduction of Monte-Carlo radiation transport via scalar flux continuity — A practical radiation treatment planning approach. , 2010, , .		0