

Curriculum Vitae

Name	CHRISTOS E. ZOIS
Working address	Department of Radiotherapy and Oncology Medical School, Alexandroupolis, Greece czois@med.duth.gr

Current Post

2020-present **Assistant Professor**, Department of Radiotherapy and Oncology, Radiobiology Unit, Democritus University of Thrace, Alexandroupolis, Greece

Research Interest

1. Metabolism within tumor microenvironment and cancer therapy resistance.
2. Discovery and Development of novel anticancer therapies for breast and glioblastoma cancer.
3. Novel approaches to protect normal tissues, boost immune system and enhance anticancer strategies.
4. Molecular adaptations and the therapeutic value of exercise and natural products in breast cancer-Metabolic interventional studies.

Education

2006-2011 **PhD in Radiation biology**, Dept. of Radiotherapy and Oncology, University Medical Hospital, Democritus University of Thrace, Alexandroupolis, Greece, (2006-2011).
PhD research topic: Autophagic and Apoptotic process during Radiotherapy: The cytoprotective effect of amifostine and exercise training. Supervisor: Michael I. Koukourakis, MD-Director of the Dept. of Radiotherapy and Oncology

2002-2004 **Master of Arts in Biological Science**, Smith College, Northampton MA, USA (2002-2004). **Master Thesis:** Cellular adaptation after a repeated bout of downhill running. Supervisor: Stylianos P. Scordilis, PhD-Director of Institute of Proteomics

1997-2001 **Bachelor Degree in Physical Education & Sports Science**, Democritus University of Thrace, Komotini, Greece, 2001. **Thesis title:** The effects of systematic exercise training in patients with type 2 diabetes. Supervisor: Savvas P. Tokmakidis, PhD-Director of Exercise Physiology lab

Previous Academic Positions

2015-2020 **Senior Postdoc Researcher at the Department of Oncology**, (2015-2020), funded by Breast Cancer Research Foundation, USA, PI: Professor Adrian L. Harris, University of Oxford.

2013 - 2015 **Early Career Researcher Marie Curie Individual Fellowship at the Department of Oncology**, 1st Sep 2013-31st Aug 2015, University of Oxford.

2012 - 2013 **Postdoc researcher at the Department of Oncology**, 1st Nov 2012-31st Aug 2013 University of Oxford, Supervisor: Professor Adrian L. Harris.

2012 - 2012 **Researcher at the Department of Radiotherapy and Oncology**, Sept 2011-Oct 2012, University General Hospital of Alexandroupolis, Democritus University of Thrace, Supervisor: Koukourakis I. Michael.

2003-2004 **Teaching Fellowship**, Department of Biological Science, Smith College, MA, USA

2002-2003 **Teaching Fellowship**, Department of Biological Science, Smith College, MA, USA

Publications

1. G.L. Celora, H. M. Byrnea, **C.E. Zois**, P.G. Kevrekidis. Phenotypic variation modulates the growth dynamics and response to radiotherapy of solid tumours under normoxia and hypoxia. (under review).
2. Mara Artibani, Kenta Masuda, Zhiyuan Hu, Pascal C. Rauher, Garry Mallett, Nina Wietek, Matteo Morotti, Kay Chong, Mohammad Karami, Nejad Ranjbar, **Christos E. Zois**, Sunanda Dhar, Salma El-Sahhar, Leticia Campo, Sarah Blagden, Stephen Damato, Pubudu Pathiraja, Shibani Nicum, Fergus Gleeson, Alexandros Laios, Abdulkhaliq Alsaadi, Laura Santana Gonzalez, Takeshi Motohara, Ashwag Albukhari, Zhen Lu, Robert C. Bast Jr., Adrian L. Harris, Christer S. Ejsing, Robin W. Klemm, Christopher Yau, Tatjana Sauka-Spengler, and Ahmed Ashour Ahmed. An Adipocyte-like Signature in Ovarian Cancer Minimal Residual Disease 1 Identifies Metabolic Vulnerabilities of Tumor Initiating Cells (under review).
3. Benedict Tanudjojo, Samiha Shaikh, Alexis Fenyi, Luc Bousset, Devika Agarwal, **Christos Zois**, Sabrina Herman-Ackah, Roman Fischer, David Sims, Ronald Melki, George K Tofaris. Phenotypic manifestation of a-synuclein strains from Parkinson's disease and multiple system atrophy in human dopaminergic neurons (under review).
4. Morotti M, **Zois CE**, El-Ansari R, Craze ML, Rakha EA, Fan SJ, Valli A, Haider S, Goberdhan DCI, Green AR, Harris AL. Increased expression of glutamine transporter SNAT2/SLC38A2 promotes glutamine dependence and oxidative stress resistance, and is associated with worse prognosis in triple-negative breast cancer. *Br J Cancer*. 2021 Jan;124(2):494-505. doi: 10.1038/s41416-020-01113-y.
5. Bridges E, Sheldon H, Kleibeuker E, Ramberger E, **Zois C**, Barnard A, Harjes U, Li JL, Masiero M, MacLaren R, Harris A. Angiogenesis. 2020 Aug;23(3):493-513. RHOQ is induced by DLL4 and regulates angiogenesis by determining the intracellular route of the Notch intracellular domain. *Angiogenesis*. 2020 Aug;23(3):493-513.
6. Fan SJ, Kroeger B, Marie PP, Bridges EM, Mason JD, McCormick K, **Zois CE**, Sheldon H, Khalid Alham N, Johnson E, Ellis M, Stefana MI, Mendes CC, Wainwright SM, Cunningham C, Hamdy FC, Morris JF, Harris AL, Wilson C, Goberdhan DC. Glutamine deprivation alters the origin and function of cancer cell exosomes. *EMBO J*. 2020 Aug 17;39(16):e103009.
7. Kawashima M, Bensaad K, **Zois CE**, Barberis A, Bridges E, Wigfield S, Lagerholm C, Dmitriev RI, Tokiwa M, Toi M, Papkovsky DB, Buffa FM, Harris AL. Disruption of hypoxia-inducible fatty acid binding protein 7 induces beige fat-like differentiation and thermogenesis in breast cancer cells. *Cancer Metab*. 2020 Jul 6;8:13.
8. David Favara, **Christos E. Zois**, Syed Haider, Elisabete Pires, Helen Sheldon, James McCullagh, Alison H Banham, Adrian L Harris. ADGRL4/ELTD1 Silencing in Endothelial Cells Induces ACLY and SLC25A1 and Alters the Cellular Metabolic Profile. *Metabolites* **2019**, 9(12), 287
9. Morotti M, Bridges E, Valli A, , Choudhry H, Sheldon H, Wigfield S, Gray N, **Zois CE**, Grimm F, Jones D, Teoh EJ, Cheng W, Lord S, Anastasiou D, Haider S, McIntyre A, Goberdhan D, Buffa F, Harris AL. Hypoxia-induced switch in SNAT2/SLC38A2 regulation generates endocrine-resistance in breast cancer. *Proc Natl Acad Sci U S A*. 2019 Jun 18;116(25):12452-12461. doi: 10.1073/pnas.1818521116. Epub 2019 May 31. (IF:9.5)
10. Valli A, Morotti M, **Zois CE**, Albers PK, Soga T, Feldinger K, Fischer R, Frejno M, McIntyre A, Haider S, Buffa F, Baban D, Bridges E, Rodriguez M, Yanes O, Whittington HJ, Lygate CA, Kessler BM, and Harris AL. Adaptation to HIF1 α deletion in hypoxic cancer cells by upregulation of GLUT14 and creatine metabolism. *Mol Cancer Res*. 2019 Jul;17(7):1531-1544. doi: 10.1158/1541-7786.MCR-18-0315. Epub 2019 Mar 18. (IF: 4.6).
11. Lord SR, Cheng WC, Liu D, Gaude E, Haider S, Metcalf T, Patel N, Teoh EJ, Gleeson F, Bradley K, Wigfield S, **Zois C**, McGowan DR, Ah-See ML, Thompson AM, Sharma A, Bidaut L, Pollak M, Roy PG, Karpe F, James T, English R, Adams RF, Campo L, Ayers L, Snell C, Roxanis I, Frezza C, Fenwick JD, Buffa FM, Harris AL. Integrated Pharmacodynamic Analysis Identifies Two Metabolic Adaptation Pathways to Metformin in Breast Cancer. *Cell Metab*. 2018 Nov 6;28(5):679-688. (IF: 20.5).
12. Jonikas M, Madill M, Mathy A, Zekoll T, **Zois CE**, Wigfield S, Kurzawa-Akanbi M, Browne C, Sims D, Chinnery PF, Cowley SA, Tofaris GK. Stem cell modeling of mitochondrial parkinsonism reveals key functions of OPA1. *Ann Neurol*. 2018 May;83(5):915-925. doi: 10.1002/ana.25221. Epub 2018 Apr 25. (IF: 10.2).

13. Koukourakis MI, Giatromanolaki A, Fylaktakidou K, Sivridis E, **Zois CE**, Kalamida D, Mitrakas A, Pouliliou S, Karagounis IV, Simopoulos K, Ferguson DJP, Harris AL. SMER28 is a mTOR-independent small molecule enhancer of autophagy that protects mouse bone marrow and liver against radiotherapy. *Invest New Drugs*. 2018 Jan 31. doi: 10.1007/s10637-018-0566-0. **(IF: 3.5)**.
14. Koukourakis MI, Giatromanolaki A, Fylaktakidou K, Kouroupi M, Sivridis E, **Zois CE**, Kalamida D, Mitrakas A, Pouliliou S, Karagounis IV, Simopoulos K, Ferguson DJP, Harris AL. Amifostine Protects Mouse Liver Against Radiation-induced Autophagy Blockage. *Anticancer Res*. 2018 Jan;38(1):227-238. **(IF:1.9)**
15. Koukourakis MI, Giatromanolaki A, **Zois CE**, Kalamida D, Pouliliou S, Karagounis IV, Yeh TL, Abboud MI, Claridge TD, Schofield CJ, Sivridis E, Simopoulos C, Tokmakidis SP, Harris AL. Normal tissue radioprotection by amifostine via Warburg-type effects. *Sci Rep*. 2016 Aug 10;6:30986. doi: 10.1038/srep30986. **(IF:4.1)**
16. **Zois CE**, Harris AL. Glycogen metabolism has a key role in the cancer microenvironment and provides new targets for cancer therapy. *J Mol Med (Berl)*. 2016 Feb;94(2):137-54. doi: 10.1007/s00109-015-1377-9. Epub 2016 Feb 17. Review. **(IF:4.9)**
17. Klionsky DJ, Abdelmohsen K, Abe A.....**Zois CE**, Zoladek T, Zong WX, Zorzano A, Zughair SM. Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). *Autophagy*. 2016;12(1):1-222. doi: 10.1080/15548627.2015.1100356. **(IF:11.1)**
18. Koukourakis MI, Kalamida D, Giatromanolaki A, **Zois CE**, Sivridis E, Pouliliou S, Mitrakas A, Gatter KC, Harris AL. Autophagosome Proteins LC3A, LC3B and LC3C Have Distinct Subcellular Distribution Kinetics and Expression in Cancer Cell Lines. *PLoS One*. 2015 Sep 17;10(9):e0137675. doi: 10.1371/journal.pone.0137675. eCollection 2015. **(IF:2.7)**
19. Volaklis KA, Smilios I, Spassis AT, **Zois CE**, Douda HT, Halle M, Tokmakidis SP. Acute pro- and anti-inflammatory responses to resistance exercise in patients with coronary artery disease: a pilot study. *J Sports Sci Med*. 2015 Mar 1;14(1):91-7. eCollection 2015. **(IF:1.9)**
20. Singleton DC, Rouhi P, **Zois CE**, Haider S, Li JL, Kessler BM, Cao Y, Harris AL. Hypoxic regulation of R1OK3 is a major mechanism for cancer cell invasion and metastasis. *Oncogene*. 2014 Dec 8;0. doi: 10.1038/onc.2014.396. [Epub ahead of print] **(IF:6.8)**
21. Giatromanolaki A, Sivridis E, Mitrakas A, Kalamida D, **Zois CE**, Haider S, Piperidou C, Papa A, Gatter KC, Harris AL, Koukourakis MI. Autophagy and lysosomal related protein expression patterns in human glioblastoma. *Cancer Biol Ther*. 2014 Aug 22:0. **(IF: 3.3)**
22. **Zois CE**, Favaro E, Harris AL. Glycogen metabolism in cancer. *Biochem Pharmacol*. 2014 Nov 1;92(1):3-11. doi: 10.1016/j.bcp.2014.09.001. Epub 2014 Sep 16. Review. **(IF:5.0)**
23. Maria A. Zachari, Panagiota S. Chondrou, Stamatia E. Pouliliou, Achilleas G. Mitrakas, Ioannis Abatzoglou, **Christos E. Zois**, Michael I. Koukourakis. Evaluation of the alamarblue assay for adherent cell irradiation experiments. Dose-Response (Prepress) Formerly Nonlinearity in Biology, Toxicology, and Medicine, 2013.
24. Koukourakis MI, A Giatromanolaki A, **Zois CE** and Sivridis E. LC3 immunostaining pitfalls. *Histopathology*. 2013 May;62(6):962-3. doi: 10.1111/his.12080. Epub 2013 Mar 26. **(IF:3.0)**
25. Abatzoglou I. **Zois CE**, Pouliliou S, Koukourakis MI. Establishment and validation of a method for multi-dose irradiation of cells in 96-well microplates. *Biochem Biophys Res Commun*. 2013 Feb 15;431(3):456-9. doi: 10.1016/j.bbrc.2012.12.146. Epub 2013 Jan 16. **(IF:2.5)**
26. **Zois CE**, Giatromanolaki A, Sivridis E, Kainulainen H, Koukourakis MI "Autophagic flux" in mice model system: Comparative assessment of endogenous LC3A and LC3B processing. *Autophagy*. 2011 Nov 1;7(11). [Epub ahead of print] **(IF:11.1)**
27. A-M Touvra, Volaklis KA, Spassis AT, **Zois CE**, Douda HT, Kotsa K, Tokmakidis SP. Combined strength and aerobic training increases transforming growth factor- β 1 in patients with type 2 diabetes. *HORMONES 2011, 10(2):125-130*. **(IF:1.7)**
28. **Zois CE**, Giatromanolaki A, Sivridis E, Tokmakidis SP, Botaitis S, Simopoulos C, Kortsaris A, Koukourakis MI. Narrow Amifostine Dose Windows Define Radioprotection Outcome, Following Fractionated Total Body Irradiation of Mice. *In Vivo*. 2011 Mar-Apr;25(2):191-6. **(IF 1.2)**

29. **Zois CE**, Giatromanolaki A, Kainulainen H, Botaitis S, Torvinen S, Simopoulos C, Kortsaris A, Sivridis E, Koukourakis MI. Lung autophagic response following exposure of mice to whole body irradiation, with and without amifostine. *Biochem Biophys Res Commun*. 2010 Dec 8. [Epub ahead of print] **(IF:2.5)**
30. Karanastassis G, Volaklis K, **Zois C**, Spasis A, Douda E, Tokmakidis S, Koukourakis M. The effects of a specific exercise program for women who completed the treatment for breast cancer. *Hell Jatr* 2010, 76: 202-209.
31. Sivridis E, Giatromanolaki A, **Zois C**, Koukourakis MI. The "stone-like" pattern of autophagy in human epithelial tumors and tumor-like lesions: an approach to the clinical outcome. *Autophagy*. 2010 Aug 16;6(6):830-3. Epub 2010 Aug 4. **(IF:11.1)**
32. Sivridis E, Koukourakis MI, **Zois CE**, Ledaki I, Ferguson DJ, Harris AL, Gatter KC, Giatromanolaki A. LC3A-positive light microscopy detected patterns of autophagy and prognosis in operable breast carcinomas. *Am J Pathol*. 2010 May;176(5):2477-89. Epub 2010 Apr 9. **(IF 5.5)**
33. **Zois CE**, Koukourakis MI. Radiation-induced autophagy in normal and cancer cells: Towards novel cytoprotection and radio-sensitization policies? *Autophagy*. 2009 May 19;5(4). [Epub ahead of print] **(IF:11.1)**
34. **Zois CE**, Tokmakidis S.P., Volaklis K., Kotsa K., Touvra A., Douda E., Yovos I.G. Lipoprotein profile, glycemic control and physical fitness after strength and aerobic training in post-menopausal women with type 2 diabetes. *Eur J Appl Physiol*. 2009 Aug;106(6):901-7. Epub 2009 May 21 **(IF 2.1)**
35. Savvas P. Tokmakidis., **Zois E. C.**, Volaklis K., Kotsa K., Touvra A. (2004), The effects of a combined strength and aerobic exercise program on glucose control and insulin action in women with type 2 diabetes. *Eur. J. Appl. Physiol.*, 92:437-442. **(IF:2.1)**
36. Volaklis K., **Zois C.**, Tokmakidis S. (2004), Resistance training in patients with diabetes mellitus. *Hellen. Diabetol. Chron.*, 2: 139-145.

Research Programs-Fellowships

1. Breast Cancer Research Foundation Oct 2018- today, 250.000\$. PI Professor Adrian L. Harris. "*Targeting hypoxia metabolism and angiogenesis for synthetic lethality*". Participate as a senior Postdoc scientist - management of the research budget and research development.
2. Breast Cancer Research Foundation Oct 2017- Sep 2018, 250.000\$. PI Professor Adrian L. Harris. "*Targeting hypoxia metabolism and angiogenesis for synthetic lethality*". Participate as a senior Postdoc scientist - management of the research budget and research development.
3. Breast Cancer Research Foundation Oct 2016- Sep 2017, 250.000\$. PI Professor Adrian L. Harris. "*Targeting hypoxia metabolism and angiogenesis for synthetic lethality*". Participate as a senior Postdoc scientist - management of the research budget and research development.
4. Breast Cancer Research Foundation Oct 2015- Sep 2016, 250.000\$. PI Professor Adrian L. Harris. "*Targeting hypoxia metabolism and angiogenesis for synthetic lethality*". Participate as a senior Postdoc scientist - management of the research budget and research development.
5. Marie Curie Individual Fellowship Project No 330071-HoRAy, 93,4% scoring- November 2012, 230.000 Euro
6. I applied for the 4 year Sir Henry Welcome Trust postdoc fellowship (Ref: 098738/Z/12/Z) and passed the two stage process, while was unable for funding after the interview due to the limit of the Budget.
7. 'Phase I/II study of the safety and efficacy of a combined approach of inhibiting angiogenesis and exploiting the induced hypoxic microenvironment by adding Dichloroacetate [DCA]' sponsored by Inspire2Live Foundation. PI Professor Adrian L Harris, Participate as a postdoc 2012-2013.
8. Travel fellowship Lockett grant award, University of Oxford 2016.
9. European Molecular Biology Organization, short term travel fellowship (90 days, June to September 2011). Weatherall Institute of Molecular Medicine, University of Oxford (Ref: ASTF 161.00-2011). 7000K
10. Tumor and Angiogenesis Research Group Travel Fellowship (September 2011- January 2012), Weatherall Institute of Molecular Medicine, University of Oxford.
11. European Workshop Cell Death, Travel Fellowship (Tisvildeleje, Denmark June 27th – July 2nd, 2010).
12. Tumor and Angiogenesis Research Group, 4 year Phd fellowship (2008-2011).
13. University of Jyvaskyla, Department of Exercise Physiology, 2 months travel fellowship (1st May 2009-30th June 2009).

14. Finish Government scholarship, 4 months Research Fellowship at the Department of Exercise Physiology, University of Jyvaskyla, (May to August, 2007).
15. Leonardo Da Vinci Fellowship, 4 months Research Fellowship at the Department of Exercise Physiology, University of Jyvaskyla, Research Fellowship in Finland (September to December 2007).
16. Blakeslee Fund for Genetic Research, Summer 8 week research program (2003), Biological Science, Smith College.
17. Howard Hughes Medical Institute, Summer 8 week research program (2003), Biological Science, Smith College.

Participate in other Research Programs

1. CRUK Research Program PI Professor Adrian L. Harris 2015-2020.
2. CRUK Research Program PI Professor Adrian L. Harris 2012-2015.
3. Participation in a research program with title **‘Targeting tumor stroma and cancer cell metabolic co-operation for Lung Cancer Therapy ’** Research Excellence ARISTEIA II (2012-2015) Principal Investigator Professor A. Giatromanolaki. (Major contribution on writing the invitro experiments and concept)
4. Participation in a research program with title **“Targeting the Autophago-Lysosomal Kinetics for the treatment of cancer and the prevention of anti-cancer therapy toxicities”** Research Excellence ARISTEIA I (2012-2015) Principal Investigator Professor MI Koukourakis. (Major contribution on writing the invitro and invivo experiments and concept)
5. Researcher in a team with title: **«PYTHAGORAS II – EXERCISE AND CARDIOVASCULAR DISEASES»** Democritus University of Thrace - Department of Physical Education & Sports Science. Supervisor Savvas P. Tokmakidis, 01/01/2005-31/12/2006
6. Participation in a research program with title **“ Physical exercise for workers in factories, industries and other service as well as in special populations with chronic diseases and populations from hospitals, institutions, and schools, for the improvement of their physical fitness and health”** as an exercise leader for patients with coronary heart diseases (September 1999 to December 1999) and type II Diabetes (February 2000 to June 2000 & October 2000 to June 2001) in order to improve their physical fitness and health.

Awards

1. **Research excellence and recognition award, Department of Oncology, University of Oxford 2016**

Membership

1. American Association for Cancer Research (A.A.C.R.)
2. Radiation Research Society (RRS)
2. CRUK Oxford Cancer Research Center
3. European Association for Cancer Research (EACR)
4. Marie Curie Alumni Association
5. American College of Sports Medicine (ACSM)
6. Hellenic Society of biochemistry and physiology of Exercise

Committee Member

1. **Athena SWAN committee member, Department of Oncology, University of Oxford, 2018-2020**

Talks in conferences/workshops/meetings

1. Role of glycogen metabolism in cancer, Oxford 2019
2. New concepts in glycogen metabolism in Cancer, Translational Cancer Research, Oxford 2019
3. Targeting VPS34 to Enhance Anticancer Therapy, Autophagy Keystone meeting 2016
4. The autophagic profile in Breast Cancer. MiTOX 2013 Chair and speaker of the session
5. The role of exercise training in survival of cancer patients. 9th Panhellenic Conference of Radiotherapy and Oncology, Alexandroupolis 2008.

Reviewer

1. Neoplasia Journal
2. Autophagy Journal
3. Cell Death and Disease
4. Cancer Research Journal
5. Radiation Oncology
6. PLoS ONE
7. Physiological reports
8. Neuroscience Letters
9. Cellular Physiology and Biochemistry

10. Scientific reports 11. Journal of Experimental & Clinical Cancer Research

Professional Training

1. I2I Ideas to Impact, Entrepreneurship Center, Said Business School of Oxford 2019-2020
2. Next Generation Leadership Program, NIHR-BCR Oxford 2019-2020
3. Research Group Leadership, 2019
4. Biological safety Course: Introduction to Biological and Genetic Modification, 2019
5. Supervision training course for PhD/MSc, Oxford 2018
6. Coaching skills for managers, June 2017
7. Managing research staff, July 2017
8. Health and life sciences Entrepreneurship, - Innovation forum Oxford, 2017
9. Teaching portfolio workshop, Feb 2016
10. Large Group and Lecturing Nov 2015
11. Preparing for Learning and Teaching at Oxford May 2014
12. Introductory Funding Workshop - Get that Grant Mar 2014

Teaching and Supervision at University of Oxford

1. I have given several lectures/seminars in Oxford University in the area of Cancer metabolism, Autophagy in cancer, novel anticancer therapies and radiation therapy.
2. Supervised of 7 phd και 2 master students. Committee for 2 transfer viva.
3. Invited, course title "Cancer physiology and anticancer therapies" University of Sichuan, China (top 3 ranked medical school in China) 30 June – 13 July 2019 (16 lecture units)