

STAVROS MELEMENIDIS

Postdoctoral fellow (Preclinical Oncology), Stanford University
Phone: +1 (847) 744-4761 (mobile). Email: stavmel@stanford.edu. [linkedin.com/in/melemenidis](https://www.linkedin.com/in/melemenidis)

Summary

Physicist and radiation biologist with a strong background in primary and metastatic mouse-tumor models, for the detection of cancer and the development of therapeutic strategies. Significant experience with small animal *in vivo* contrast enhanced molecular imaging and radiation delivery with treatment planning.

Key Skills

- Animal work:** Syngeneic and xenograft mouse models, engraftments, orthotopic inoculations, micro-surgical recovery procedures, drug administration, blood collection, tumor measurements, tissue collection and fixation.
- Therapy:** CT-based treatment planning, precise radiation delivery, anti-CTLA-4, anti-PD-1 and anti-C5aR-1 inhibitor.
- Imaging:** *In vivo* MRI, PET, SPECT, CT, MPI, BLI, US and use of contrast agents.
- Lab skills:** Cell culture, cell transfection, cell irradiation, cryosectioning, microtome, immunohistochemistry, immunofluorescence, solution preparation, particle-antibody conjugation, quantification of antibody loading, FACS, western blot, ELISA.

Research experience

Stanford University School of Medicine; Postdoctoral Fellow Stanford, CA
Department of Radiation Oncology; Advisor: Edward E. Graves Feb 2016-Present

Development of *in vivo* mouse tumor models for imaging, radiotherapy and immunotherapy.

- Characterized ultrasound (US)-guided injections; tumor-mouse models for liver metastasis
- Investigate immune cell migration; macrophage imaging
- Evaluated radioprotection of healthy tissue; drug development
- Delivered precise radiation therapy with CT-based treatment planning
- Innovated an *in vivo* water-mediated platform for molecular Contrast Enhanced US (mCEUS); targeted microbubbles (TMB)

University of Oxford; Postdoctoral Fellow Oxford, UK
Department of Radiation Oncology; Advisor: Nicola R. Sibson Jan 2015-Sep 2015

Design and evaluation of novel imaging probes for sensitive imaging of metastasis and angiogenesis.

- Characterized a dual MRI/PET probe for metastasis and an MRI probe for angiogenesis
- Innovated a double micro-metastasis tumor-model; lungs and brain
- Detected early stages of metastasis and angiogenesis
- Quantified and correlated imaging datasets with histological staining
- Established and organized an international collaboration with Duke University
- Performed *in vivo* bright lung MRI with hyperpolarized Xenon and Helium

Education

University of Oxford, Department of Radiation Oncology DPhil, Radiation Biology. Mentors: Prof. Nicola Sibson, Prof. Ruth Muschel.	Oxford, UK 2010-2015
Thesis: <i>Development of molecular targeted imaging methods for the detection of lung metastasis and angiogenesis.</i>	
University of Oxford, Department of Radiation Oncology MSc, Radiation Biology	Oxford, UK 2009-2010
University of Liverpool, Department of Physics MSc, Radiometrics; Instrumentation and Modelling	Liverpool, UK 2008-2009
University of Liverpool, Department of Physics BSc, Physics: Medical Applications	Liverpool, UK 2005-2008
Greek Technical College, IIEK Neapoleos Technical Engineer, PC Systems and Peripheral Equipment	Thessaloniki, Greece 1998-2000

International conference presentation

Oral presentation: *Development of tumor models to study normal tissue radioprotection by C5aR1 inhibition.* Aegean Conferences: 12th International Conference on Complement Therapeutics. Rhodes, Greece, July, 2019.

Poster presentation: *Inhibiting C5a-C5aR pathway to improve radiation response.* Aegean Conferences: 5th International Conference for Tumour Microenvironment and Cellular Stress. Greece, Crete, June, 2018.

Poster presentation 1: *In vivo PET detection of lung metastasis by targeting endothelial VCAM-1.* **Poster presentation 2:** *Molecular MRI for the detection of tumour angiogenesis.* Aegean Conferences: 3rd International Conference for Tumour Microenvironment and Cellular Stress. Greece, Mykonos, September, 2014.

Poster presentation: *Development of a new molecular imaging approach for early detection of lung metastasis.* TOPIM: Imaging the hallmarks of cancer. Les Houches, France, January, 2013.

Oral presentation: *Development of a new molecular imaging approach for early detection of lung metastasis.* ESTRO: Novel Targeted Drugs and Radiotherapy. Toulouse, France, September 2012.

Oral and Poster presentation: *Development of in-vivo hyperpolarised gas molecular MRI method for early detection of lung metastasis, targeting VCAM-1.* Keystone Symposium: Inflammation during Carcinogenesis. Dublin, Ireland, May, 2012.

Awards & Honors

Recognition of excellent research: Aegean Conferences: 12th International Conference on Complement Therapeutics. Rhodes, Greece, July 2019.

Poster Prize: Aegean Conferences: 3rd International Conference for Tumour Microenvironment and Cellular Stress. Mykonos, Greece, June 2014.

Invited presentation: Oxford Cancer Imaging Center Retreat, 2014 and 2013.

Invited presentation: Oxford Institute Metastasis Symposium, 2014.

Publications

Melemenidis S. Knight JC, Kersemans V, Perez-Balderas F, Zarghami N, Sarmiento Soto M, Bart Cornelissen B, Muschel RJ, Sibson NR. (2019) *In vivo PET detection of lung micrometastasis by targeting endothelial VCAM-1. EJNMMI* (In revision: EJNM-D-19-01107).

Wu1 W and Klockow JL, Mohanty S, Ku1 KS, Aghighi M, **Melemenidis S**, Chen Z, Li K, Morais GR, Zhao N, Schlegel J, Graves EE, Rao J, Loadman PM, Falconer RA, Mukherjee S, Chin FT, Daldrup-Link HE. (2019) *Theranostic nanoparticles enhance the response of glioblastomas to radiation. Nanotheranostics* (doi:10.7150/ntno.35342).

Ye J, Thompson C, Li A, Ducker G, Li Y, Seoane J, Xiao Y, **Melemenidis S**, Zhou Y, Liu L, Rabinowitz J, Vanharanta S, Graves E, Rankin E, Curtis C, and Massague J. (2019) *Metabolic profiling reveals a dependency of human metastatic breast cancer on mitochondrial serine and one-carbon unit metabolism. Mol Cancer Res* (In revision: MCR-19-0606-ATR).

Rafat M, Aguilera TA, Vilalta M, Bronsart LL, Soto LA, von Eyben R, Golla MA, Ahrari Y, **Melemenidis S**, Afghahi A, Jenkins MJ, Kurian AW, Horst KC, Giaccia AJ, Graves EE. (2018) *Macrophages Promote Circulating Tumor Cell-Mediated Local Recurrence following Radiotherapy in Immunosuppressed Patients. Cancer Res* (PMID: 29880480).

Melemenidis S, Jefferson A, Ruparelia N, Akhtar AM, Xie J, Allen D, Hamilton A, Larkin JR, Perez-Balderas F, Smart SC, Muschel RJ, Chen X, Sibson NR, Choudhury RP. (2015) *Quantitative molecular magnetic resonance imaging of angiogenesis in vivo using polyvalent cyclic RGD-iron oxide microparticle conjugates. Theranostics* (PMID: 25767618).

Review articles

Olcina MM, Kim RK, **Melemenidis S**, Graves EE, Giaccia AJ. *The tumour microenvironment links complement system dysregulation and hypoxic signaling.* (2018) *Br J Radiol* (PMID: 29544344).

Manuscript in preparation

Melemenidis S, Kim A, Kaffas EIA, Abid D, Graves EE, Hristov D. *Water mediated contrast enhanced ultrasound with a clinical system and for detection of radiation induced differential expression of P-selectin in subcutaneous tumors.* In preparation.

Olcina MM, **Melemenidis S**, Kim, RK., Nambiar, DK, Mizuno K, Casey KM. von Eyben, R, Graves EE, G, Le, Quynh-Thu, Stucki M, Giaccia AJ. *Targeting the complement system in combination with radiotherapy improves tumor response and reduces radiation-induced toxicity.* In preparation.

References

Prof Edward E Graves

Title: Associate Professor of Radiation Oncology (Radiation Physics) and director of Molecular Imaging Program at Stanford.

Department: Radiation Oncology - Radiation Physics, University of Stanford School of Medicine.

Telephone: +1 (650) 723-5591

Email: egraves@stanford.edu

Prof Nicola R Sibson

Title: Professor of Oxford Institute for Radiation Oncology and Senior group leader of Experimental Neuroimaging group.

Department: Radiation Oncology, University of Oxford.

Telephone: +44 (0)1865 225836

Email: nicola.sibson@oncology.ox.ac.uk

Prof Dimitri Hristov

Title: Associate Professor of Radiation Oncology (Radiation Physics) and Medical Center Line.

Department: Radiation Oncology - Radiation Physics, University of Stanford School of Medicine.

Telephone: +1 (650) 498-7898

Email: dimitre.hristov@stanford.edu