

Dr. Rallia-Iliana Velliou

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EDUCATION

07/2022: Doctoral Degree in Biomedical Engineering (Ph.D.); Department of Mechanical Engineering, University College London, UK (**Thesis Title:** Development of a multi-scale framework for predicting tissue remodelling in thoracic aortic aneurysms (TAAs))

12/2014: Graduate studies (MPhil), Department of Chemical Engineering, Imperial College London, UK.

02/2011: Diploma in Chemical Engineering, School of Chemical Engineering, NTUA, Greece

RESEARCH EXPERIENCE

07/2022 – present: Post-doctoral researcher; School of Medicine, NKUA, Greece

Duties: Development of non-invasive in vivo micro-computed tomography (CT) imaging method to assess MASLD progression.

08/2015 – 10/2016: Research Scientist; Department of Bioengineering, The Royal British Legion Centre for Blast Injury, Imperial College London, UK

Duties: Characterization of lumbar spine following repetitive loading associated with whole-body vibration and shock impact using 3D imaging and finite element modelling.

07/2015-present: Research Scientist; Orion Spacecraft Mission, USA

Duties: Software development for determining solid-solid transitions according to molecule orientation.

01/2013-06/2015: Research Assistant; Centre for Process Systems Engineering, Imperial College London, UK

Duties: Development of a mathematical framework for predicting the melting point of organic crystalline solids used as active pharmaceutical ingredients (APIs) for optimising in vivo performance.

SELECTED PUBLICATIONS

1. Papadakos, S.P., Georgiadou, C., Kassi, E., **Velliou, R.**, & Chatzigeorgiou, A. Animal models of lean metabolic dysfunction-associated steatotic liver disease (MASLD): bridging pathogenesis and novel drug discovery. **Expert Opinion on Drug Discovery** (2025)
2. Chatzigeorgiou, A., Moustogiannis, A., Christopoulos, P.F., Vlachogiannis, N.I., Michopoulos, F., Verrou, K., Papadopoulos, G., **Velliou, R.**, Giannousi, E., Mitroulis, I., Chmelař, J., Theodossiou, T.A., Samiotaki, M., Philippou, A., Sfrikakis, P.P., & Koutsilieris, M. Exercise induces anti-inflammatory reprogramming in macrophages via Hsp60. **bioRxiv** (2025)
3. **Velliou, R.**, Giannousi, E., Ralliou, C., Kassi, E., & Chatzigeorgiou, A.. Ex Vivo Tools and Models in MASLD Research. **Cells** (2024)
4. **Velliou, R.**, Legaki, A., Avdi, A.P., Nikolakopoulou, P., & Chatzigeorgiou, A. THU-214 Spatiotemporal non-invasive characterization of the hepatic microenvironment during metabolic dysfunction-associated liver disease progression. **Journal of Hepatology** (2024)
5. Papadopoulos, G., Giannousi, E., Avdi A., **Velliou, R.**, Nikolakopoulou, N., Chatzigeorgiou, A., T cell-mediated adaptive immunity in the transition from metabolic dysfunction-associated steatohepatitis to hepatocellular carcinoma, **Frontiers in Cell and Developmental Biology** (2024)
6. **Velliou, R.**, Legaki, I., Nikolakopoulou P., Vlachogiannis NI.*, Chatzigeorgiou, A.*, Liver endothelial cells in NAFLD and transition to NASH and HCC, **Cell Mol Life Sci** (2023)
7. Hadjihambi, A.*, **Velliou, R.***, Tsalios, P., Legaki, I., Chatzigeorgiou, A.*, Rouchota, M.*, Novel In Vivo Micro-Computed Tomography Imaging Techniques for Assessing the Progression of Non-Alcoholic Fatty Liver Disease, **J. Vis. Exp** (2023)
8. **Velliou, R.**, Mitroulis, I., Chatzigeorgiou, A., Neutrophil extracellular traps contribute to the development of hepatocellular carcinoma in NASH by promoting Treg differentiation, **HepatoBiliary Surgery and Nutrition** (2022)
9. Legaki, I., Moustakas, I., Sikorska, M., Papadopoulos, G., **Velliou, R.**, Chatzigeorgiou, A., Hepatocyte mitochondrial dynamics and bioenergetics in obesity-related non-alcoholic fatty liver disease, **Current Obesity Reports** (2022)

HONOURS AND AWARDS

1. 2024: Farmakiotis Award, Panhellenic Conference on Endocrinology Metabolism and Diabetes Mellitus.
2. 2015: 1-year funding from the Royal Faculty for Defense Medicine, UK
3. 2010: Thomaidion Award (3rd place) NTUA