

Constantine Garagounis-*Curriculum vitae*

Education:

2010-2014

DPhil: Department of Plant Sciences, University of Oxford;

Thesis title: "*Microcompartmentation of aldolase in Arabidopsis*"; This research project focused on how the molecular interactions of aldolase can affect its function and contribute to regulation of metabolic or signaling pathways it participates in. **Supervisors:** Professor Lee J. Sweetlove; Dr. Ian R. Moore; Awarded **Gatsby PhD Scholarship** for the duration of the DPhil.

2006-2010

BSc: Department of Biochemistry and Biotechnology, University of Thessaly, Greece; GPA 8.2/10.0

Research Experience

2018-

Post-doctoral researcher: Department of Biochemistry and Biotechnology, University of Thessaly, Greece; Participating in the "Omic Engine" consortium for developing a framework and infrastructure for synthetic biology in Greek universities. Roles involve: rational design of biosynthetic pathways for the production of high-value metabolites, developing synthetic systems in prokaryotic and eukaryotic cell chassis for rapid screening of plant metabolite bioactivities.

Feb 2019

EMBO Short term fellowship: Visiting researcher in Prof. A. Aharoni's laboratory at the Weizmann Institute of Science, Israel, training in metabolite analysis and metabolomics techniques in metabolite engineering. Collaboration on metabolic engineering and biosynthetic pathway elucidation projects

May 2019

2015-2017

Post-doctoral researcher: Department of Biochemistry and Biotechnology, University of Thessaly, Greece; Participating in the multinational EP7 TRIFORC consortium. Role involved identification of novel bioactive plant compounds in engineered cell systems, describing their biosynthetic pathways in plants using molecular and biochemical techniques and generating transgenic plant lines that accumulate these or derivative compounds in abundance, in order to facilitate their large-scale production and exploitation.

May 2014

Research placement: School of Biological and Biomedical Sciences, Durham University, UK; One-month research placement with Professor P.J. Hussey; Conducted research relevant to DPhil thesis and received training in advanced microscopy techniques (FRET-FLIM).

Oct-Nov 2014

Research placement: School of Biological Sciences, University of Bristol, UK; Two-month research placement with Professor A.M. Hetherington; Conducted research and received training in experiments related to plant stomatal guard cell physiology and function.

2010-2014

DPhil Thesis research: Conducted in the Department of Plant Sciences, University of Oxford. Research included a variety of molecular biology and biochemical techniques with emphasis on fluorescence-based microscopy techniques, generation and isolation of transgenic plant lines, protein-protein interaction techniques, site-directed mutagenesis, and recombinant protein expression in a variety of systems.

Jan-May 2010

Undergraduate thesis project: Department of Biochemistry and Biotechnology, University of Thessaly, Greece; "*Silencing of beta-amyrine synthase gene, AMY2, in roots of the model legume Lotus japonicus.*" **Supervisor:** Professor K. Papadopoulou

Feb 2009-May 2010

Voluntary laboratory work: Participated in the ongoing research project "*Synthesis and Role of Triterpenes in the Function and Development of Roots in the Model Legume Lotus japonicus.*" supervised by Professor K. Papadopoulou.

July 2008-Aug 2008

Research Internship: Hematology laboratory of the University Hospital of Larissa, Greece; Worked as an analytical laboratory assistant.

Teaching experience

Sep 2016-

Contracted lecturer: Planning and teaching a *Synthetic Biology* elective course for 4th year students at the Dept. Of Biochemistry and Biotechnology, University of Thessaly.

Jan 2019

Oct 2015-

Contracted lecturer (ΠΔ407/80): Conducted lectures and set relevant exam questions on Plant photosynthesis and central carbon metabolism as part of the mandatory curriculum course "Plant

Jan 2018

Physiology”, run by Prof. K. Papadopoulou at the Dept. Of Biochemistry and Biotechnology, University of Thessaly.

2013 **University “Scholar”:** Conducted practical laboratory courses as part of the mandatory curriculum course “Plant Biotechnology”, run by Prof. K. Papadopoulou at the Dept. Of Biochemistry and Biotechnology, University of Thessaly.

2015 **Tutored:** Undergraduate Biology and Biochemistry students at University of Oxford in subjects related to plant photosynthesis and central carbon metabolism.

Training & Workshops

2010-2014 **Garnet-open plant CRISPR-Cas workshop:** John Innes Centre, Norwich, 7-8 September, 2015
Participated in “Biotechnology YES”: A science entrepreneurship competition organised by the BBSRC and Syngenta, UK. The competition simulated the identification of an exploitable scientific finding in the field of plant sciences and its exploitation covering all stages from initial discovery, research and development of a marketable product, and final commercial strategy.

2010-2011

Gatsby Training weekends: Participated in five annual training weekends organized by the “Gatsby Charitable foundation for Plant Sciences” for funded graduate students. Included training in: science writing, presentations to specialist and non-specialist audiences, training in planning research projects and engagement in outreach activities.

Reading, Writing, and Speaking in Science: Two-month training course on how to effectively communicate science to specialist audiences for first year DPhil students; organized by Professor Liam Dolan, Dept. Plant Sciences, University of Oxford;

Basic Plant Ecology and Evolution: Two-month course organized by Dr. S. Harris, Dr. Caroline Pannell and the Oxford Botanic Gardens;

Communicating Science to the Public: Two-month course in communicating science to non- specialist audiences, including a presentation to pre-school children and one to A-level students, organized by the Oxford Botanic Gardens and Prof. Liam Dolan;

Science Outreach activities:

Fascination of Plants Day: (2013) Participated in a group outreach effort held by members of the Dept. of Plant Sciences, University of Oxford, with stalls displaying various aspects of Plant Sciences and how such research can benefit society.

Presentations to non-specialist audiences: (2010-2011) Including pre-school children, A-level students, and non-academic staff of the Dept. of Plant Sciences.

Awards and Achievements

EMBO Short-term fellowship: Placement with Prof. A. Aharoni’s lab at Weizmann Institute of Science to conduct experiments and acquire training in metabolomics and relevant data analysis (Feb-May 2019)

Awarded Gatsby PhD scholarship. Competitive funding that required the submission of a written research proposal and defense of the proposed research plan, both of which were judged by senior academics. Covering all costs for the duration of doctoral studies and including various training and networking opportunities.

Phytochemical Society of Europe-Best Poster Award at POBHH-PSE Symposium, Ghent, Belgium, November 2016.

Received best talk prize at the Departmental Science Symposium (September 2013) held by the Dept. of Plant Sciences, University of Oxford;

In top 10 of BSc graduating class;

Received ‘Education First Award’ (2006), for graduating with the highest GPA of my class in high school senior year;

Publications-Translations

1. Karra A., Konstantinou M., Tzortziou M., Tsialtas I., Kalousi F., **Garagounis C.**, Hayes J., Psarra A.M., Potential Dissociative Glucocorticoid Receptor Activity for Protopanaxadiol and Protopanaxatriol. *International journal of molecular sciences*, 2019, 20 (1), 94
2. **Garagounis C.**, Tsikou D., Plitsi K.P., Psarrakou S.I., Avramidou M., Stedel C., Anagnostou M., Georgopoulou M.E., Papadopoulou K.K., Lotus SHAGGY-like kinase 1 is required to suppress nodulation in *Lotus japonicus*. *The Plant Journal*, 2019, 98 (2), 228-242
3. Fatemi, Farzaneh and Abdollahi, Mohammad Reza and Mirzaie-asl, Asghar and Dastan, Dara and **Garagounis, Constantine** and Papadopoulou, Kalliope; "Identification and expression profiling of rosmarinic acid biosynthetic genes from *Satureja khuzistanica* under carbon nanotubes and methyl jasmonate elicitation", *Plant Cell, Tissue and Organ Culture (PCTOC)*, 2019; 136; 561-573.
4. **Garagounis C**, Kostaki KI, Hawkins TJ, Cummins I, Fricker MD, Hussey PJ, Hetherington AM and Sweetlove LJ, Microcompartmentation of cytosolic aldolase in Arabidopsis by interaction with the actin cytoskeleton. *The Journal of Experimental Botany*, 2017;68(5):885-898.
5. Ben Abdallah, RA; Stedel, C; **Garagounis, C**; Nefzi, A; et al., Involvement of lipopeptide antibiotics and chitinase genes and induction of host defense in suppression of Fusarium wilt by endophytic *Bacillus* spp. in tomato. *Crop Protection*. 2017;99:45-58.
6. Dimitra Katsarou, Michalis Omirou, Kalliopi Liadaki, Daniela Tsikou, Costas Delis, **Constantine Garagounis**, et al., Glucosinolate biosynthesis in *Eruca sativa*. *Plant Physiology and Biochemistry*, 2016, 109, 452-466.
7. Krokida A, Delis C, Geisler K, **Garagounis C**, Tsikou D, Pena-Rodriguez LM, et al. A metabolic gene cluster in *Lotus japonicus* discloses novel enzyme functions and products in triterpene biosynthesis. *The New phytologist*. 2013;200(3):675-90.
8. **Book Translation** "Synthetic Biology: A primer" (Baldwin et al, Imperial College Press, ISBN 978-1-78326-879-5) into Greek in collaboration with Utopia publishing.