ΙΝΣΤΙΤΟΥΤΟ ΜΟΡΙΑΚΗΣ ΒΙΟΛΟΓΙΑΣ ΚΑΙ ΒΙΟΤΕΧΝΟΛΟΓΙΑΣ INSTITUTE OF MOLECULAR BIOLOGY AND BIOTECHNOLOGY

SEMINAR

Causes and genomic consequences of adaptation to chemical stressors in changing environments

Adaptation to chemical stressors can drive extraordinary changes in the physiology and genomic composition of organisms. My research investigates the molecular mechanisms and genomic consequences of adaptation to plant toxins and synthetic insecticides by combining experimental evolution in field mesocosms with large-scale phenotypic and genomic analyses, as well as genome editing. I will discuss how monarch butterflies and other specialist insects have convergently evolved resistance to host plant toxins over millions of years (Karageorgi et al., Nature, 2019), and how insecticide-resistance alleles persist in natural Drosophila populations across seasonal timescales—likely without disrupting other seasonal evolutionary processes (Karageorgi et al., Nature Ecology and Evolution, in revision, 2025).

Marianna (Marianthi) **Karageorgi**

Biology Department, Stanford University

FRIDAY 04/04/2025

13:00

Costas Fotakis room

Dr. Marianna Karageorgi's research focuses on the **genetics of adaptation** to novel and changing environments. She earned a BSc in Biology from the University of Crete (2009), an MSc in Molecular Biosciences from the University of Heidelberg (2012), and a PhD in Neurosciences from the University of Aix Marseille (2017) as a Marie Curie Fellow. In her postdoctoral research at University of California, Berkeley and Stanford University, supported by an NIH Pathway to Independence Award, her research integrated functional **genomics, experimental evolution, and large-scale phenotypic and genomic analyses** to study how organisms adapt to chemical stressors in novel and seasonally fluctuating environments.

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