

# Fulbright-Greece 2019 Lecture Series



## Nanomagnetism in Biology, Biotechnology & Medicine

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### ABSTRACT

Nanoscience has allowed the manipulation of matter at nano-meter size dimensions, smaller than the biological cell. Lessons learned from life processes, such as the biomineralization of nano-ferrihydrite and nano-magnetite in living systems, have led to biomimetic approaches in the synthesis and stabilization of biocompatible magnetic nanosystems, enabling nanomagnetism's contributions to nano-biotechnology and nano-medicine. In this talk we will review some fundamental concepts in magnetism at the nanoscale, the challenges faced in the production of monodispersed magnetic nanoparticles, their physical characterization and their applications in biotechnology and medicine.



**Short Biography:** Georgia Papaefthymiou-Davis obtained the bachelor's degree from Barnard College and the PhD degree from Columbia University. She was a research scientist at the Francis Bitter National Magnet Laboratory at MIT before she relocated to Villanova University, where she currently holds the position of Full Professor at the department of Physics. Her interests lie in interdisciplinary science at the interface of Physics, Chemistry, Biology and

Materials Science, with a current emphasis on the magnetism of nanostructures at the molecular/solid boundary. She has received research funds from the National Science Foundation (NSF) and the National Institutes of Health (NIH). She is the recipient of prestigious awards, The Marie Curie Chair of Excellence award from the EU, the CAPES award from Brazil and the Fulbright Scholar Award from the US Department of State.