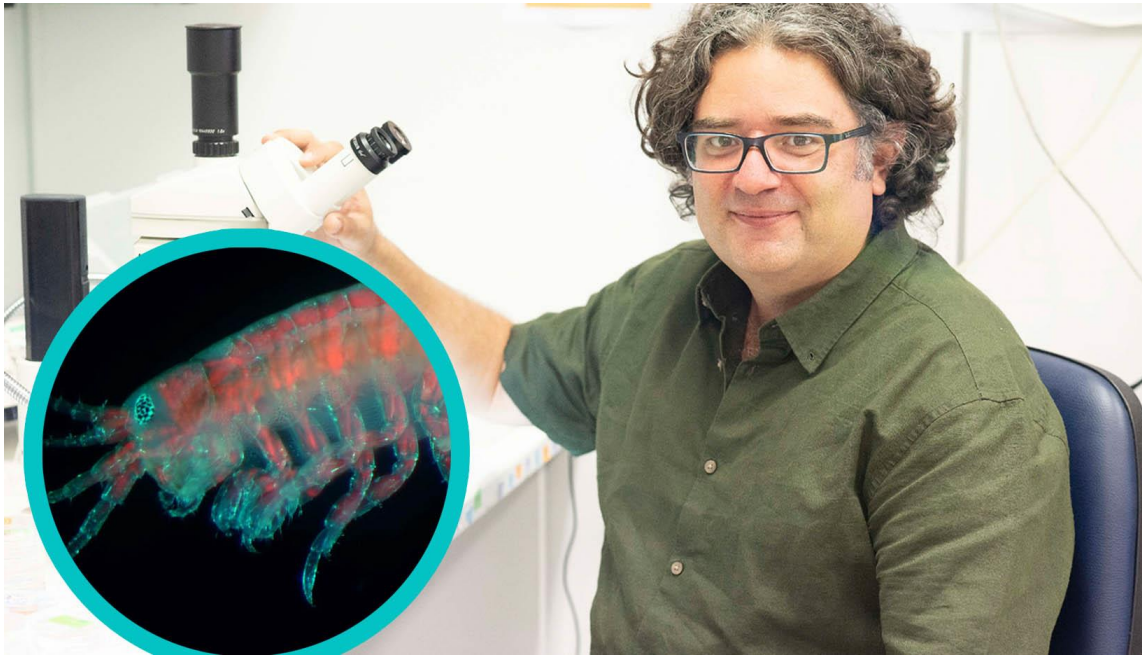




Heraklion 04/05/2023

PRESS RELEASE

Prestigious HFSP Research Grant awarded to FORTH Researcher Dr. Anastasios Pavlopoulos



Anastasios Pavlopoulos, Principal Researcher at the Institute of Molecular Biology and Biotechnology of the Foundation for Research and Technology – Hellas (IMBB-FORTH) is awarded a Research Grant from the 2023 Human Frontiers Science Program. HFSP promotes international collaboration in basic research focused on the elucidation of the sophisticated and complex mechanisms of living organisms. Anastasios Pavlopoulos is the Principal Investigator of an international team with Co-PIs Dr. Liangqi (Frank) Xie at the Cleveland Clinic Foundation in USA and Dr. Léo Guignard at the Aix-Marseille University in France. The team will receive \$1.2 million in funding for three years to study the cellular and molecular basis of bilaterian symmetry.

Bilateral symmetry is a hallmark of most animals. The external left and right sides of bilaterians develop separately but somehow manage to produce symmetric matching halves, which is vital for proper function, such as symmetrical limbs for locomotion. Bilateral symmetry is astonishing considering the number of constituent cells, the long developmental times and the pervasive occurrence of destabilizing factors. How animals build and maintain bilaterally symmetric tissue architectures remains a mystery. This HFSP-funded project will take a holistic strategy bridging the molecular, cellular and tissular scales in live developing embryos to elucidate the control mechanisms that establish their bilateral symmetry during normal embryogenesis and restore it during healing.

Together with his team at IMBB-FORTH and collaborators, Anastasios Pavlopoulos will integrate experimental and computational frameworks to understand how the information encoded in the genome instructs cells to divide, change shape or position to sculpt correctly proportioned matching halves. These studies will resolve

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how tissue-level patterns emerge from cell-level properties. They will also reveal how autonomous mechanisms in each side are combined with feedback mechanisms between sides to coordinate growth and promote symmetry. Finally, they will provide a mechanistic understanding for dysmorphic phenotypes, such as craniofacial asymmetries that are among the most common human birth defects.

Short bio:

Anastasios Pavlopoulos completed his Bachelor's degree at the University of Patras, his Master's degree at the University of Crete and his PhD degree with Dr. Michalis Averof at IMBB-FORTH and the University of Crete. He conducted postdoctoral research with Prof. Michael Akam at Cambridge University in UK and with Dr. Pavel Tomancak at the Max Planck Institute of Molecular Cell Biology and Genetics in Germany. In 2013, he started his independent research as a fellow at the HHMI Janelia Research Campus in USA and, as of 2019, he is a group leader at IMBB-FORTH. His lab investigates the molecular, cellular and mechanical basis of tissue and organ morphogenesis during animal development and evolution. Anastasios Pavlopoulos has supervised more than 30 undergraduate, graduate and post-doctoral researchers and his work has been published in top peer-reviewed scientific journals, including, Nature, Nature Communications, Nature Physics, eLife, Current Biology, Proceedings of the National Academy of Sciences USA and others.

More info:

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Relevant links:

<https://www.imbb.forth.gr/pavlopoulos>
<https://www.hfsp.org/awardees/newly-awarded>