



Marie Skłodowska-Curie
Actions

Job Opportunity at Slovak University of Technology in the Marie Skłodowska-Curie Innovative Training Network “ImageInLife”



ImageInLife is a Marie Skłodowska-Curie ITN funded by the European Commission Horizon2020 programme and focused on the training of European experts in multilevel bio-imaging, analysis and modelling of vertebrate development and disease. The network consists of participants from academia and the private sector who have joined forces to educate the next generation of imagers of the physiology and pathology of living organisms. The project will run for 4 years, starting 1 January 2017.

In the context of the **ImageInLife** network, **the Department of Mathematics and Descriptive Geometry, Slovak University of Technology in Bratislava, is recruiting 1 Early Stage Researcher** (ESR, PhD student) on the project detailed below. The ESR will be offered an interdisciplinary education programme that includes a PhD trajectory with training-through-research in individual project, secondments at research groups of other network partners, and a variety of local and network-wide courses and workshops.

Project : Cell tracking in 3D+time images

The ESR will be employed in the group of Prof. Karol Mikula with Dr. Róbert Špir and Dr. Oľga Stašová as co-supervisors. The ESR will work on a development of novel methods for cell tracking and lineage tree reconstruction from 4D images (3D+time videos) of embryo development. The ESR will be trained in mathematical modelling in image processing and analysis, design of numerical methods for solving partial differential equations, efficient, parallel, computer implementation of numerical algorithms and development of high-performance computing (HPC) strategies. New tracking methods will be based on cell trajectories extraction by a finding of centered paths in 4D space-time segmentations, including efficient distance function calculations and evolving curves computing strategies. The results of new tracking methods will be validated on real microscopic data in cooperation with other project partners from developmental biology and imaging.

Applicants should hold a degree in mathematical and/or computational sciences and must comply with the eligibility criteria and transnational mobility rules for Marie Skłodowska-Curie Innovative Training Networks:

- **Early-stage researchers (ESRs)** will be appointed for 3 years as Marie Skłodowska-Curie fellows. They will register for a PhD in applied mathematics study programme at the graduate school of the Faculty of Civil Engineering of the Slovak University of Technology. At the time of recruitment, they shall be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.
- **Full-Time Equivalent Research Experience** is measured from the date when the researcher obtained the degree entitling him/her to embark on a doctorate (either in the country in which the degree was obtained or in the country in which the researcher is recruited or seconded), even if a doctorate was never started or envisaged.
- **Trans-national mobility** (i.e. move from one country to another) is an essential requirement of Marie Skłodowska-Curie Innovative Training Networks. Researchers can be of any nationality. At the time of recruitment by the host organisation, researchers must not have resided or carried out their main activity (work, studies, etc) in the country of their host organisation for more than 12 months in the 3 years immediately before the reference date. Compulsory national service and/or short stays such as holidays are not taken into account. Applicants must also be prepared to be seconded for short periods (from several weeks up to maximally 30% of the recruitment period) to other network partners to carry out part of their research work.

The ESR will be employed at the host institute by a contract with full social security coverage. He/she will receive a gross salary augmented by a mobility allowance in line with the EC rules for Marie Skłodowska-Curie grant holders. Candidates will be selected based on their educational background, research experience, fluency in spoken and written English, and motivation to take part in and contribute to the research and training programme of the **ImageInLife** consortium.

Applications - in English - should include **a cover letter, curriculum vitae, certificates of examination results, and two reference letters**. To apply and for more information on this position, please contact Prof. Karol Mikula at karol.mikula@stuba.sk. The application deadline is **31.10.2017**.