PhD Position

Visualisation of multi-scale and multi-modal MSD modalities

An appointment as an Early Stage Researcher (ESR) is available at the Welfenlab, Leibniz Universität Hannover in Germany within the framework of the European Marie-Curie Research and Training Network entitled "MultiScaleHuman" (http://multiscalehuman.miralab.ch/).

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General information on the MultiScaleHuman project

Aim of the Project

The goal of **Multiscale** Biological modalities for physiological **human** articulation (MultiScaleHuman) is to research by **training early stage** researchers (ESR) and **experienced** researchers (ER) in the creation of a multi-scale biological data visualization and knowledge management system for improved understanding, diagnosis and treatment of physiological human articulations.

MultiScaleHuman will exploit advances in multiscale biological modalities and their integration by addressing five core biological scales: **Molecular**, **Cellular**, **Tissue**, **Organ** and **Behaviour** scales.

This will be achieved through initiating a network of ESR/ER with training provided from a three-sector-research consortium which involves **academic** (education), **hospital** (social actors) and **private** (industry) sectors. MultiScaleHuman will provide a **unique training program**, from technical to complementary skills learning by fully exploiting the training opportunities that Marie Curie ITN provide and by building a consortium of partners that brings **multi-disciplinary skills** in the understanding and treatment of physiological articulations in MSD and related disorders.
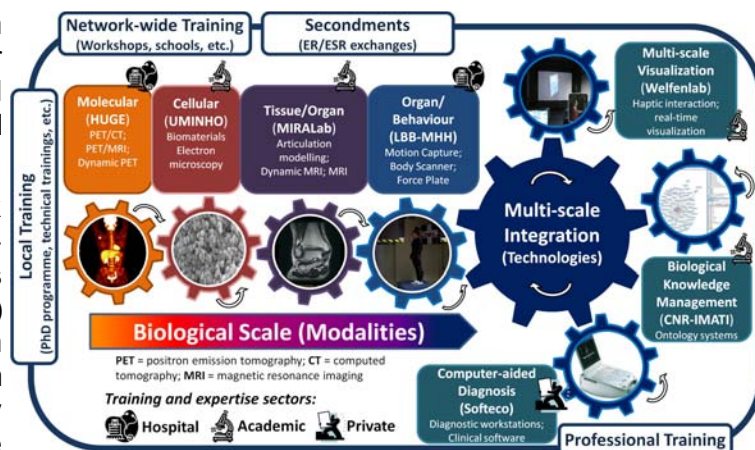
Partners

- MIRALab (coordinator), Université de Genève, Geneva, Switzerland
- HUGE, Les Hôpitaux Universitaires de Genève, Geneva, Switzerland
- UMINHO, Universidade do Minho, Braga, Portugal
- LBB-MHH, Medizinische Hochschule Hannover, Hannover, Germany
- CNR-IMATI, Consiglio Nazionale Delle Ricerche, Genoa, Italy
- Softeco Sismat Srl, Genoa, Italy
- Welfenlab, Gottfried Wilhelm Leibniz Universitaet Hannover, Hannover, Germany

A Marie Curie Research Training Network

MultiscaleHuman is a Marie Curie Research Training Network project within EU's [Seventh Framework Programme]. These Networks provide the means for research teams of recognised international stature to link up, in the context of a well-defined collaborative research project, in order to formulate and implement a structured training programme for researchers in a particular field of research.

Criteria of selection

For Marie Curie programme criteria and regulations, please consult the web site: http://ec.europa.eu/research/mariecurieactions/ and especially the brochure called "The European Charter for Researchers & the Code of Conduct for their Recruitment": http://ec.europa.eu/euraxess/index.cfm/rights/brochure

PhD position details

Description of the work

Goal of this thesis is to develop an integrated visualization and system featuring smooth transitions between different scales, which will substantially improve the understanding and analysis of Musculoskeletal Diseases (MSD). Especially the smooth transition model has to be developed. The goal of this system is to be of benefit to integrative research, providing intuitive access to the developed techniques and the interpretation of the obtained results. In the long term the accumulated experiences and knowledge gained will be the basis for a practical visualization system supporting physicians in the diagnosis and treatment of MSD which will also allow for quantitative assessment of the success of the latter ("quantitative biology").

The thesis will include training periods at some sites of the European partners of this network.

Requirements

Applicants will ideally have a background in either biomedical sciences, computer science or any relevant discipline including biomechanical small scale modeling. Strong programming skills (Java, C++, VTK) are essential for the project. Previous knowledge of image processing, motion analysis techniques and a strong mathematical background are an asset. English written and spoken is necessary.

Criteria on nationality, age and qualification apply. The candidate must preferably be citizen of the European Union. Researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organization for more than 12 months in the 3 years immediately prior to the reference date. Short stays, such as holidays, are not taken into account.

The criteria and provisions of the European Marie Curie Research and Training Network, drafted by EC, will be applied (please consult http://ec.europa.eu/research/mariecurieactions/)

We strongly encourage the application of women candidates.

Contract details

Start Date: May 1, 2012
Duration: 36 months
Salary calculated according to the European Community regulations for Marie Curie Research and Training Network

Application

Applications must be sent to few@welfenlab.de. Contact person: Prof. Franz-Erich Wolter. Prof. Wolter is the head of the Welfenlab and Research Affiliate of MIT.

Please make sure to mark in the "Subject" field of your email in capital letters "MSH ER APPLICATION".

For application please supply:
- A detailed Curriculum Vitae
- A list of publications
- A letter of motivation.
Please add the scan of an identity document.

Deadline: March 31, 2012