



## EU Marie-Curie Initial Training Network



### TRANSPOL

A European Research Training Network at the interface of  
Cell/Molecular Biology and Membrane Physics

Topic: Transport and Signalling mechanism in Polarized Cells

Call: FP7-PEOPLE-ITN-210

Proposal Number: 264399

**Project title:** The impact of intracellular signalling on the mechanical properties of cells measured with atomic force microscopy and optical stretcher - implications for metastasis and invasion

**Type of position:** Early Stage Researcher (ESR)/ PhD position

**Reference Code:** TRANSPOL-P14

**Eligibility:** To this position applies a mobility rule. The respective candidate must not have worked for more than 12 months in the UK within the last three years. Furthermore, the candidate needs to be in his/her first four years of his/her research career. The four years are counted from the date a degree was obtained which formally entitles to embark on a doctorate.

**Starting date:** October 1<sup>st</sup>, 2011

**Duration:** 36 months

**Salary:** According to the Marie Curie-ITN rules: around 36000 Euro/year plus monthly mobility allowance of 500 Euro/month

**Short description:** Many intracellular signalling pathways are ultimately linked to the regulation of the cytoskeleton, which in turn is the main determinant of cell mechanical properties and generates physical forces to enable specific cell functions such as migration, mitosis, phagocytosis etc. The Guck group has recently demonstrated this link between cell function and mechanics in the context of cell migration. The aim of this project is 1.) to investigate the link between cell mechanics and proteins which have been shown to regulate cell polarization as well as vesicular trafficking like the multi-PDZ domain proteins PTP-BL, FRMPD2, DLG5.

Corresponding cell systems will be analyzed in collaboration with RUB (K.Erdmann). 2.) together with UGEN (A.Roux) the mechanical properties of artificial liposomes will be analyzed. Cell mechanics in both cases will be assessed using the contact-free optical stretcher developed in the Guck lab, for suspended cells and liposomes and cell indentation with an atomic force microscope will be applied for attached cells.

**Job**

**Requirements:** Experimental background in biophysics, engineering or cell biology.

**Host Institute:** Cavendish Laboratory, Department of Physics  
University of Cambridge  
UK

**Supervisor:** Dr. Jochen Guck  
e-mail: [jg473@cam.ac.uk](mailto:jg473@cam.ac.uk)  
Tel: +44-1223 748914  
Fax: +44 1223 337000

**How to apply:**

Please send the following documents via e-mail to the supervisor or the TRANSPOL coordinating office: [transpol@rub.de](mailto:transpol@rub.de).

- Clearly indicate the project you are applying for by referring to the Reference code of this job offer
- Letter of motivation (research interests, reasons for applying to this program and project, respectively)
- A complete CV
- Parts 1 and 3 of the CHRIS/6 cover sheet (see <http://www.admin.cam.ac.uk/offices/hr/forms/chris6/>)
- The names and contact details of two referees

**Deadline  
for application:** June 28<sup>th</sup>, 2011

**For further  
information:** Please contact the supervisor of this project or directly the TRANSPOL coordinating office: [transpol@rub.de](mailto:transpol@rub.de)