

The **Jena School for Microbial Communication (JSMC)** is funded by the German **Excellence Initiative** and comprises more than 180 PhD students who are educated in a structured, interdisciplinary training program based on top-level fundamental research. Five faculties of the Friedrich Schiller University Jena, six non-university research institutions as well as twelve partner companies are participating in this cutting edge research and training program that includes an innovative PhD program, career development, and intensive sociocultural care.

“Beutenberg-Stipendien” is a PhD fellowship program within JSMC, funded through the federal initiative “ProExzellenz” of the Free State of Thuringia. Research projects within this program are situated at interfaces between life sciences and physics. The projects will be mentored by at least two supervisors at collaborating research institutions in Jena.

The Graduate School of Excellence ‘JSMC’ invites applications for a

PhD Student Fellowship (Ref.No. JSMC-53/2010) on the topic

Developing a novel high-resolution microscopy mode for the structure elucidation of the human kinetochore

The PhD student will develop a novel mode of microscopy imaging which aims at obtaining structural biological information at a resolution down to about 30nm for many (10-100) target molecules associated with the kinetochore complex. The methodology is based on combining a high resolution single molecule technique (photo activated localization microscopy, PALM) and addressing the multiple molecular targets by using multi-epitope ligand cartography (MELC). Both of these techniques have been shown to achieve impressive results and thus the combination should be capable of producing extremely valuable scientific information about the organisation of the kinetochore. The three-dimensional molecular structure of the kinetochore is still unknown but is essential for the understanding of its function and its role in cancer development.

This project is situated within two highly motivated groups in the interface between Biology (Prof. Stephan Diekmann, Kinetochore complex) and Physics (Prof. Rainer Heintzmann, high resolution microscopy techniques), where experience, team-work and guidance with many aspects of the project will be provided.

We expect:

- a Master's degree (or equivalent) in Natural Sciences (preferably in Physics, Biology or Bioinformatics). Candidates about to earn their degree are welcome to apply.
- high motivation and interest to join one of the interdisciplinary research areas of the JSMC
- creativity and interest to shape your own thesis project
- an integrative and cooperative personality
- very good communication skills in English (instruction language at the JSMC)

We offer:

- a research project at the interface between life sciences and physics/technology
- a highly communicative atmosphere within a scientific network providing top-level research conditions
- a PhD stipend paid according to the rules of the DFG (German Research Foundation)
- a comprehensive mentoring program with efficient supervision by a team of supervisors situated a life science and a physics/technology institution
- a structured PhD training program including courses in novel technologies and soft skills
- Jena – the **German City of Science 2008**: a young and lively city with dynamic business activities, successful scientific centres of innovation and a vibrant cultural scene around the famous Friedrich Schiller University

Friedrich Schiller University Jena is an equal opportunity employer.

The application procedure is handled online exclusively via the JSMC website:

www.jsmc.uni-jena.de

To apply, please acquaint yourself with the vacant PhD projects and the application process described on this website. Applications can only be considered upon receipt of the completed ‘Statement of Interest’ form, submitted by email to **apply-jsmc@uni-jena.de** before the deadlines listed below.

Selected applicants will be invited to the JSMC Recruitment Meeting in Jena, Germany, in September 2010. Awarding decisions will be made shortly thereafter, allowing for an immediate start of the PhD projects.

Application deadlines (i.e. deadline for submission of the completed ‘Statement of Interest’ form):

For applicants who will require visa to attend the recruitment meeting in September: **Deadline July 5, 2010**

For applicants who will not require a visa to enter Germany: **Deadline July 26, 2010**

(Please note: applications from non-EU-national can only be considered if attendance at the recruitment meeting is possible with 2 weeks prior notice. Please provide an explanatory statement)