Universität Rostock Traditio et Innovatio

# Research assistant (6 month):

## Identification of microRNA and transcription factor mediated regulatory network in malignant melanoma progression

In this project we investigate the role of miRNAs in the progression of melanocytic malignancies. We analyse the expression profiles of >700 miRNAs in three disease stages, i.e. primary melanoma, lymph node - and distant cutaneous metastasis through RT-PCR experiments. Our aim is to find a subset of miRNAs that can be used as diagnostic markers in order to differentiate between different disease states. We are also interested in those miRNAs that show a distinct regulatory effect on target mRNAs (oncogenes, tumor surpressor genes) that if de-regulated can pander melanoma progression.

Tasks:

1. Identification of co-regulated miRNAs (miRNA cluster) among those differentially expressed.
2. Investigation of mechnisms that regulate miRNA expression.
3. Drafting a gene regulatory network incorporating proir knowledge about promotors, TFs, etc. extracted from literature and public repositories and infereneces (e.g. feedback loops) from expression profiles extractible from our PCR experiments.
4. Creation of a map of pathways that promote melanoma progression and the involvement of miRNAs.

Qualification:
Background in a quantitative or computational discipline; interest in multidisciplinary work covering statistics, mathematical modeling, genetics and molecular biology; competence in scientific computing and computer programming.
This position is available for 6 month only. No further extension is planned.

Commencing date: 1 April 2010

Interested candidates should send their CV and documents in pdf format to: **olaf.wolkenhauer@uni-rostock.de**

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