

The Center of Cellular Nanoanalytics (**CellNanOs**) at the **University of Osnabrück** seeks two

Bioimaging Experts

for the operation and scientific support of the DFG-funded bioimaging core facility

iBiOs (integrated Bioimaging Facility Osnabrück)

The positions are to be filled at earliest convenience. Payment is according Germany pay scale E13 TV-L, full time. Contracts are initially fixed for 3 years, and extensions are anticipated.

Overview:

The Center for Cellular Nanoanalytics Osnabrück (**CellNanOs**, www.cellnanos.uni-osnabrueck.de) is an interdisciplinary research center of the schools of Biology/Chemistry, Physics, Human Sciences and Mathematics/Informatics at the **University of Osnabrück** promoting research at the interface between nanosciences and cell biology. **CellNanOs** aims to provide a dedicated bioanalytical infrastructure for unraveling basic functional principles of cellular microcompartments in the context of a variety of physiological processes and biological organisms. This overarching topic of the Biology Department in Osnabrück has been the focus of the collaborative research center **SFB 944** since 2011 (https://www.biologie.uni-osnabrueck.de/sonderforschungsbereich/sfb_944_home.html).

Advanced high and super-resolution fluorescence and electron microscopy are key methodologies within the **CellNanOs** and **SFB 944**, which are funded by the DFG through the core facility initiative **iBiOs** since early 2017. The **CellNanOs** was rigorously planned to create ideal conditions for the application and integration of advanced light and electron microscopy techniques. Next to single molecule localization microscopy up to four colors, a clone of the lattice light sheet microscope (LLSM) from the Betzig lab was recently successfully installed. Laboratories with ultrahigh vibrational stability and climate control will be closely interconnected to versatile sample preparation facilities and cell culture.



Clone of Eric Betzig's LLSM in iBiOs. The LLSM is equipped with seven lasers (405 nm, 445 nm, 488 nm, 532 nm, 561 nm, 589 nm, 642 nm) and a live cell periphery for fast volumetric imaging with single molecule sensitivity.

Tasks:

The main scope of the **iBiOs** is to provide dedicated techniques for visualizing the nanoscopic spatiotemporal organization of cellular microcompartments in cells, tissues and small organisms.

The scientist on position **iBIOS1/2017** will adapt lattice light-sheet microscopy to various cell types (plant, insect and mammalian cell lines), tissues and small organisms to allow for volumetric imaging at highest spatiotemporal resolution. For this purpose, he/she will establish 3D super-resolution techniques based on structured illumination microscopy (SIM and non-linear SIM) and single molecule localization microscopy (PALM/STORM, PAINT) for LLSM. In close collaboration with the electron microscopy unit (serial block face SEM, FIB-SEM, EM-tomography, etc.), he/she will implement correlative light and microscopy (CLEM) approaches.

The scientist on position **iBIOS2/2017** is mainly responsible for developing tailored image and data processing algorithms for the visualization, segmentation and quantitative spatiotemporal analysis of complex multidimensional data sets from light and electron microscopy. He/she needs to establish effective workflows with user-friendly software and high-performance matching hardware for big data sets (10-100 GB).

Both scientists are expected to closely collaborate with the existing **iBiOs**-team (www.calm.uni-osnabrueck.de) in order to provide support in planning and implementation of light and electron microscopy experiments as well as dedicated data analyses. Established workflows for sample preparation, data acquisition and application of software tools should be disseminated by regular user workshops.

Requirements:

Applications are invited by scientists with a background in life or natural sciences that hold a PhD. Relevant working experience should be documented, for example by publications. Candidates for position **iBIOS1/2017** should have sound experience in optics and bioimaging, and working experience with conventional and advanced light microscopy techniques, such as super resolution microscopy (SIM, SMLM). Applicants for position **iBIOS2/2017** should provide profound experience in image processing and programming skills in at least one language, such as MATLAB, Java, Python, C++ or CUDA.

Both scientists will be fully integrated into an interdisciplinary research environment and should be highly motivated to engage into a wide spectrum of biological research topics. Together with the rest of the team, they will take responsibilities for the further development of the organization and strategic concept of **iBiOs**.

As a certified family-friendly institution, the University of Osnabrück is committed to furthering the compatibility between work/studies and family life. As an employer, the University of Osnabrück is particularly concerned with creating equality opportunities for women and men. Women with relevant qualifications are therefore strongly encouraged to apply for the positions. Furthermore, qualified applicants with disabilities will be favored.

Please send your application with a reference to position **iBIOS1/2017** or **iBIOS2/2017** as a single PDF (including CV, publication list, PDF of representative publications, and contact information of two references) in electronic form by **13 July 2017** to the Dean's office of the School of Biology/Chemistry (Prof. Dr. Achim Paululat, School of Biology/Chemistry, Barbarastr. 11, D-49076 Osnabrück (Germany), bewerbung@biologie.uni-osnabrueck.de).

Questions regarding the positions should be directed to Prof. Dr. Jacob Piehler (+49-541-969-2800 or piehler@uos.de).