



22.11.2018

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin. The department Numerical Mathematics is offering a

Research Position PostDoc (f/m)
(Reference code: WA 60/18)
Pay grade E13 – TV-L Berlin (100%)

The position – subject to the approval of funds – is offered starting 1st of January, 2019 or at the earliest possible date and will be a fixed-term contract until 31.12.2020.

Background

The position is part of the research project “The spatio-temporal modelling of mechanisms underlying pain relief via the μ -opioid receptor” of the Cluster of Excellence MATH+ at ZIB and Freie Universität Berlin (FUB) in cooperation with Berlin’s university hospital Charité and the Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC). The main goal of this project is development of a spatio-temporal data-based mathematical model of cellular signaling pathways activated by μ -opioid receptors as well as the development of associated simulation techniques. The successful candidate will be part of a larger research team; the main tasks will be the analysis of the activation process and related conformation dynamics of μ -opioid receptor complexes and their integration into particle-based reaction-diffusion models. Efficient simulation techniques and methods for integrating experimental data and analyzing dynamical properties of the activation processes will be developed in parallel.

Tasks

The tasks related to the position include:

- extension of available techniques for modelling activation process and conformation dynamics based on massive molecular dynamics simulations
- integration of conformation dynamics models like Markov state models into particle-based reaction diffusion models based on preliminary research results
- integration of experimental data into the respective models
- publication of results in peer-reviewed journals

We expect creativity and a high degree of commitment in solving problems. We offer a friendly working atmosphere, excellent equipment, and a challenging professional environment. We offer scientists in all career stages opportunities for further qualification and support and expect research on top level with international visibility. Through the cooperation with the MDC, this project also offers the opportunity to work in an inter- and transdisciplinary context.

Requirements

- promotion in mathematics, physics, computer science, or related disciplines
- good programming skills
- experience in some or all of the following areas is essential: molecular and conformation

- dynamics, numerical mathematics, stochastic processes, statistical physics
applicants are expected to be highly motivated, self-reliant, and open-minded to interdisciplinary

Dealing with the subject, we expect a good cooperation with users, ability of good communication and team skills, a high degree of working independently and commitment, cooperative action within the Cluster of Excellence, as well as involvement in outreach activities. The opportunity for an intensive training is given. Scientific publications on an international level are our goal.

The candidature of women is encouraged. Since women are underrepresented in information technology, ZIB is trying to increase the proportion of women in this research area.

Persons with disabilities will be given preference, when equally qualified.

Please send your application, quoting the reference code **WA60/18**, including CV in tabular form and all relevant documents by **Dec. 13th, 2018** (date of receipt) to

Zuse Institute Berlin (ZIB)

- Administration -

Takustr. 7

14195 Berlin

or electronically as pdf-form to: jobs@zib.de.

You can find our privacy policy on our website at www.zib.de/impressum.

Further information about the position can be obtained on our website www.zib.de or from Dr. Marcus Weber (weber@zib.de) or Prof. Dr. Christof Schütte (schuette@zib.de).

For further job offers please visit our website at www.zib.de.