

Post-doctoral fellowship ***NMR spectroscopic investigation of the molecular organization of protein condensates.***

As part of the BOUNDLESS consortium (boundless.au.dk), we are looking for a post-doctoral fellow to develop and apply NMR spectroscopy to investigate the role of condensate formation on kinase signaling. The position is available in Linz, Austria, at the Institute of Biochemistry of Johannes Kepler University and supervised by Prof. Dr. Frans A.A. Mulder.

We are looking for somebody who is strongly motivated about and sufficiently skilled in NMR spectroscopy, with an interest in applications to protein and cell science. You will develop and apply NMR methods to: (1) study the partitioning of small molecules in various proteins condensates, (2) study the dynamics of partitioning, (3) devise isotope labeling schemes to study proteins and small molecules inside condensates, (4) study condensate structure, dynamics, and structural evolution. As part of the consortium, you will collaborate with international investigators who apply coarse-grained molecular simulations and kinase biochemistry. Your results will help describe and understand how a pivotal protein kinase can respond differentially in space and time.

About you: The ideal candidate has a strong track record from his/her PhD, including significant first-author, peer-reviewed publications, and 0-3 years of post-doctoral experience. A strong background in NMR spectroscopy and/or other biophysical methods is a must, experience with protein expression and purification is an advantage, otherwise training can be provided. It is possible to apply prior to the PhD degree award with a convincing CV.

About us: We are a diverse team with multiple nationalities and backgrounds ranging from physics to biology. We share a strong interest in the interplay of protein biochemistry and NMR spectroscopy for the study of important and interdisciplinary research questions. Ongoing projects in the lab include *Borrelia* structural biology, sensory peptides, enzyme dynamics, protein evolution, protein-ligand interactions, and metabolomics. The innovation of NMR methodology is key to many of these research fields.

JKU has a modern and green, vibrant campus close to the city, with affordable living. Our protein biochemistry laboratories are brand-new and highly spacious. We have facilities for protein production in various host cells and all the modern tools for expression and purification. The JKU NMR center hosts a Bruker 700 MHz fitted with a cryoprobe dedicated to protein work that is just upgraded with a NEO console and a 500 MHz Avance III spectrometer that is capable of imaging, liquids, and solids spectroscopy. A third high-field NMR spectrometer will be added in the coming year. The NMR facility is also fitted for metabolomics research. Access to higher field (800-950 MHz) is available nearby. Linz (<https://en.wikipedia.org/wiki/Linz>) is a nice and livable city at the Danube River, known for innovation in science x arts, with easy access to beautiful natural surroundings, including great hiking, cycling, and skiing possibilities. Linz has an oceanic climate with warm summers and moderately cold winters.

For more information, contact [frans.mulder@jku.at](mailto:frans.mulder@jku.at)

## **Job Duties**

- Actively take part in department research (as well as in the conception and completion of research projects).
- Actively take part in interdisciplinary, international cooperation projects.
- Develop, assess, and apply advanced NMR and biochemistry methods.
- Assist in writing research grant applications.
- Provide organizational support to the institute.

## **Teaching**

- Co-supervise Bachelor's and Master's theses research projects.

## **Research Publication**

- Actively take part in writing publications from research results.
- Publish in international peer-reviewed academic journals.

## **Your Qualifications**

- The successful candidate must hold a Doctorate/Ph.D. degree (or soon be awarded) in (Structural) Chemistry or Molecular Biophysics with demonstrated experience in NMR spectroscopy or other advanced biophysics techniques.
- Possess a strong academic background as demonstrated by published scientific work, with clear contributions (e.g. first authorship).
- Extensive research experience is a prerequisite.
- Experience with protein production and purification is deemed valuable.
- Strong didactical skills are appreciated.
- Good command of English (spoken and written) is expected.
- Good command of German is not necessary, but willingness to learn is advantageous.
- Independence and capacity to organize one's work.

## **Our Offer**

- State-of the art NMR infrastructure
- Varied and unique opportunities to develop NMR techniques.
- Newly established and spacious biochemical laboratory with ample workspace and new equipment
- Attractive green campus
- Great outdoors (hiking, skiing, biking)