CeNT-26.1-2023

Director of Centre of New Technologies of the University of Warsaw, with the Project Leader, announce opening of the competition for the position of PhD Student in the Biomolecular Modelling Laboratory – Centre of New Technologies of the University of Warsaw.

JOB OFFER

Position in the project:	PhD Student
Laboratory:	Biomolecular Modelling Laboratory
Scientific discipline:	Physical sciences/chemical sciences/biological sciences
Keywords:	protein structure, biomolecular evolution, molecular dynamics simulations
Job type (employment contract/stipend/other):	stipend
Part-time/full-time:	full time
Number of job offers:	1
Stipend amount/month:	5000 PLN gross gross
Position starts on:	01.10.2023
Maximum period of contract/stipend agreement:	36 months
Institution:	Centre of New Technologies, University of Warsaw
Project leader:	Dr. Piotr Setny
Project title:	*From ancestral peptides to contemporary proteins: folding and stability of protein building blocks*
Competition type:	Sonata Bis 10
Financing institution:	National Science Centre
Project description:	Using molecular dynamics simulations we will investigate the stability, dynamics and interaction patterns of basic protein building blocks. These, so called, supersecondary motifs are typically formed by two regular secondary structure elements linked by loops. Current theory concerning the origin of complex protein structures assumes that they were initially formed by merger of simpler peptides. Indeed, a trace of such ancient units, in the form of sequentially and structurally similar polypeptide fragments present in modern, unrelated protein domains, has been identified. Given the idea that they survived during evolution likely acting as folding seeds for protein domains, we will verify if they possess any extra stability in comparison to structurally analog but sequentially unrelated protein fragments, and if yes, than what are the determinants of this stability. Answering those questions will shed light on a) the mechanism by which proteins fold overcome unfavourable hydration contributions, b) the emergence of

	hydrophobic protein cores, c) the principles allowing the design of new protein structures.
Key responsibilities include:	• setting up and conducting molecular dynamics simulation • developing custom analysis methods • preparing scientific presentations and manuscript drafts • participating in seminars and conferences
Profile of candidates/requirements:	Practical requirements: • basic knowledge of Linux operating system and scripting language (e.g. Python, Perl) • good knowledge of English • previous experience with molecular modelling would be welcome, although it is not strictly necessary Formal requirements: • The competition is open for persons who meet the conditions specified in the regulations on the allocation of resources for the implementation of tasks financed by the National Science Centre for Sonata Bis 10 grant. • MSc degree in physics, chemistry, biology or related discipline. The MSc degree should be obtained before the date of starting work in the project. • Confirmed status of a PhD student in Poland (on the date of starting work in the project at the latest).
Required documents:	1. Cover letter 2. Current curriculum vitae with the list of scientific activities undertaken to data 3. Contact details of the former supervisor or a recommendation letter sent directly to the project leader (*p.setny@cent.uw.edu.pl*) 4. Copy of MSc certificate (or, if the MSc certificate has not been obtained yet, a certificate/document about the date of MSc defense) 5. Document confirming the status of PhD Student (to be provided before starting work in the project); 6. Signed information on the personal data processing.
We offer:	• work in a friendly atmosphere, in a modern and well equipped institute • Extensive training in computational modelling of complex biomolecular systems • Opportunity to participate in courses and conferences • Access to state of the art computing equipment
Please submit the following documents to:	*p.setny@cent.uw.edu.pl*
Application deadline:	02.06.2023
Date of announcing the results:	07.06.2023
Method of notification about the results:	Email, website: https://cent.uw.edu.pl/en/career/