Opinion

Dr. Rumyana Kirova Yordanova

in the competition for academic position "Associate Professor"

in the professional field 4.6 "Informatics and Computer Science"

specialty "Informatics (Informatics models in genomics)"

Reviewer: Prof. Stefka Stoyanova Fidanova

By Order No 342 of 23.12.2021 of the Director of the Institute of Mathematics and Informatics at the BAS, prof. Peter Boyvalenkov on the grounds of Art. 2, para. 2 of the law and the decision of the Scientific Council of IMI-BAS (Minutes No. 20 of 17.12.2021). I was appointed a member of the scientific jury under the procedure for the academic position of "Associate Professor" in the professional field 4.6 "Informatics and Computer Science", scientific specialty "Informatics" (Informatics models in genomics), announced for the needs of section "Information Modeling"in the State Gazette no. 91/02.11.2021. As a member of the Scientific Jury I have received all the documents attached to the application to the Director of IMI-BAS of the only candidate for the competition, Rumyana Kirova Yordanova.

According to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the regulations for its implementation and the specific requirements introduced in the regulations of IMI-BAS, applicants must meet the following requirements:

1. Have acquired a doctorate degree in education and science;
2. Have held the academic position of "Associate Professor" at the same or another higher education institution or scientific organization for at least two academic years;
3. Have submitted published monographs or equivalent publications in specialized scientific editions which do not repeat the ones submitted for the acquisition of the educational and scientific degree "Doctor", the scientific degree "Doctor of Sciences" and for the occupation of the academic position "Associate Professor";
4. Have presented other original scientific works, publications, inventions and other scientific and applied scientific works which are evaluated in aggregate;
5. Meet the national minimum requirements;
6. Not to have plagiarism proven by statutory order in scientific works.

Assistant Professor Dr. Rumyana Kirova Yordanova receives educational and scientific degree "Doctor" from Marquete University, USA on the basis of a defended dissertation "Markov chain decomposition and characterization of hypertensive blood pressure with application to linkage analysis".

Rumyana Yordanova has a total of 38 publications, 15 of them with impact factor and 18 with impact rank.

For Group B requirements, Rumyana Yordanova submitted 3 publications with impact factor in Q1, the total number points is 150 for required 100.

For Group G indicators, a total of 8 publications are presented, 1 with impact factor in Q1, 5 with impact factor in Q2 and 2 with Impact Rank. The total number of points is 290 for required 220.

Dr. Rumyana Yordanova submitted 14 citations by other authors. All are with impact factor or impact rang. The total number of points is 84 with a required 70 under indicator D. He has other 1100 citations, which are not included in the concurs materials. He has h=12 index.

Dr. Rumyana Yordanova participated in one project, funded by the national scientific fund and one funded bipartite project. The total number of points is 30 with the required 20 under indicator E.

Assistant Professor Rumyana Yordanova fulfills and, by some indicators, significantly exceeds the national requirements, as well as the specific requirements of BAS and IMI for the academic position of "Associate Professor".

The main part of Rumyana Yordanova's publications are in the field of information methods in genomics and were developed by a team of scientists from different fields of science, development and application of bioinformation and statistical methods for analysis and integration of microbiological data "omics" including DNA , RNA, gene expressions and whole genome sequences.
The main contributions to research can be systematized as follows:
1. Methods for "Systems Biology Analysis" and associations between different "omics" data.
An analysis of the processes of controlling the expression of genetic information as well as epigenetic changes has been made. It can be used for treatments such as genes whose

polymorphisms regulate their expression, which in turn lead to effects on a particular phenotype or disease.

2. Methods for the analysis of micromassive genomic data including time series microarrays

An analysis of dynamic micromassive data from mice was performed using statistical methods, graphical models, generalized logical networks and an ontological database of phenotypically centered genomic associations.

3. Analysis of microbiological genomic data for modeling antimicrobial resistance

Bioinformatics methods for analysis of bacterial genomic data and modeling of antimicrobial resistance have been developed.

I do not know the candidate and I have no personal impressions.

The materials presented by the candidate are complete and detailed. They contain the necessary information required by law. The contributions are presented concisely and summarized, with emphasis on the significant author's contribution.

CONCLUSION

According to the presented documents, the candidate Rumyana Yordanova fulfills all the requirements of the law and the Regulations to it and the Regulations for the specific requirements for acquiring academic degrees and occupying academic positions at BAS and IMI-BAS. I give a positive conclusion for the selection of Rumyana Yordanova in the competition for the academic position of "Associate Professor" in the professional field 4.6 "Informatics and Computer Science", scientific specialty "Informatics" (Informatics models in genomics).

I propose that the Scientific Jury unanimously vote on a proposal to the Scientific Council of the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences to select Assist. Prof. Rumyana Yordanova for the academic position "Associate Professor" in the professional field 4.6 "Informatics and Computer Science", scientific specialty "Informatics" (Informatics models in genomics) .

28.01.2022