СОФИЙСКИ УНИВЕРСИТЕТ
„СВ. КЛИМЕНТ ОХРИДСКИ“

FACULTY OF BIOLOGY
SOFIA UNIVERSITY

OPINION

by Prof.Dsc Yana Ilieva Topalova /researcher R4 in BF/
Faculty of Biology of SU "St. Kliment Ohridski"

of the documentation submitted for participation in a competition for the academic position of PROFESSOR in the Faculty of Biology of SU "St. Kliment Ohridski"

Field of higher education: 4. Natural sciences, mathematics and informatics,
Professional direction: 4.3. Biological Sciences, Hydrobiology (ichthyology, aquaculture)
to SU "St. Kliment Ohridski", Faculty of Biology,
Department of "General and Applied Hydrobiology"

1. General review of the tender documentation submitted by the applicant

In the announcement in the State Gazette, no. 82 of 1410.2022 and on the Internet page of Sofia University competition for PROFESSOR in 4.3. Biological Sciences (Hydrobiology - /Ichthyology and Aquaculture) for the needs of the Faculty of Biology, the documents of one candidate - Assoc. Dr. Eliza Petrova Uzunova - were received on time. It is evident from them that the participant in the competition meets the conditions under Section IV of National Low for development of academic personel, respectively - on Articles 60 and 61 of Rules of the execution document, and also - on items 1 - 5 of Section V of the Recommendations of SU "St. Kliment Ohridski", Faculty of Biology. The opinion was prepared in accordance with this normative base. The reference for the minimum requirements under Article 26 of the National Low for development of academic personel.

2. **Background development and thematic profile of the candidate**

The only participant in the announced competition - associate professor Dr. Eliza Uzunova - is a teacher in the Department of General and Applied Hydrobiology of the Faculty of Biology of the SU. She has almost 26 years of work experience, all spent at SU. Associate Professor Uzunova graduated from the Faculty of Biology and has a master's degree in Fisheries and Ichthyology, obtained in 1994, SU. She defended her doctoral thesis on the topic "Influence of heat shock on ploidy, survival and sexual maturation of grayling /*Salvenius fontinalis*/", worked successively as assistant, chief assistant and currently associate professor in the Department of General and Applied Hydrobiology. I have known associate professor Uzunova since she joined the department. Throughout her entire career and professional development, she accumulated, manifested, improved, tested in a different way, valuable experience in the field of teaching, pedagogic and organizational work at SU. She was not afraid to try and introduce innovations in educational and scientific-applied aspect. With her participation, we have developed and introduced new study disciplines, new master's programs in the long-term priority area - Hydrobiology, Applied Hydrobiology, aquaculture, fish farming, management of water resources and modified water bodies with the incorporation of hydrotechnical and technological facilities.

Her developed expertise has been confirmed in the implementation of numerous projects, she is a sought-after and valuable expert in the field of Assessment and management of the risk of alien and invasive species of hydrobionts, assessment of rare and endangered ichthyological species, approaches to ensure and restore river connectivity, aquaculture , design, implementation of field studies of ichthyofauna, taxonomy, ecology and distribution of freshwater fishes in lotic and lentic water bodies.

In recent years, she has demonstrated and developed in partnership directions related to the molecular assessment of ichthyological dependencies with hydrobionts. I believe that this broad hydrobiological, ichthyological profile of the candidate with a strong emphasis on applicability and consideration of the whole picture in research and applied development is a valuable, long-built potential. It is important not only for the future professor candidate, but also for the entire Department of General and Applied Hydrobiology, for the Faculty of Biology, and is unique on a national scale.

3. Research activity of the candidate

3.1. Review and analysis of publications and scientometric data

The general impression from the documentation submitted for the competition is that the following can be pointed out in the foreground: scale - large volume, diversity, high indicators in relation to the requirements for the occupation of the academic position "PROFESSOR" at SU "St. Kliment Ohridski". Below in the table I have presented the specific numbers of scientific papers by group and the corresponding number of points.

Associate Professor Uzunova has presented a total of 72 scientific articles, conference reports and book chapters. In the current competition, 13 scientific articles in international scientific publications, referenced and indexed in Web of Science and Scopus, 2 books, 5 book chapters are presented. A monograph is also presented as a habilitation thesis. Particularly valuable from an educational point of view is the textbook "Practical Guide to Exercises in Ichthyology". The candidate has submitted a list of 162 scientific article citations in Web of Science and Scopus, her H-index is 8, and the total number of citations is about 500.

Indicators	**Evidence presented**	**Number of points**
A.	Dissertation on a topic for ONS Doctor	50
B.	3. Habilitation work / Monograph/	100
Г.	5. A monograph that is not presented as a dissertation work 7. Scientific publications in publications - referenced and indexed in world famous databases - 13 nos. 8. Chapter of a collective monograph - 7 pcs.	30 211 105
	GENERAL FOR G.	346 т.
D.	Citations	306+8
E.	Successfully defended doctoral students – 1 pc.+1 pc. Participation in national Projects – 16 pcs. Participation in international projects - 7 pcs. Management of the National Projects – 14 pcs. Attracted funds	50/25 160 140 280 30
GENERAL		**1502**

All the indicated numerical data lead to two important intermediate conclusions: 1/ The candidate has a diverse, rich and fully compliant scientific output that exceeds the necessary indicators for the position of "PROFESSOR"; 2/ She is a renowned researcher and creator nationally and internationally for her developments in the fields of ichthyology, aquaculture and the management of modified and fragmented aquatic ecosystems.

3.2. Basic scientific and scientific-applied contributions on the habilitation report and as overall contributions to the publication activity

I will evaluate the scientific production thus described from my position as a researcher and teacher, more than 40 years of work experience in the Biological Sciences and in the University Education in Biology and the various ecological and hydrobiological directions in various aspects and scientific educational degrees.

Associate Professor Uzunova's scientific contributions can be systematized in the following thematic areas, which are related and complementary in accordance with the subject of the announced competition for PROFESSOR.

First: Alien and invasive species of hydrobionts;

Research on foreign and invasive fish species in Bulgaria is important in this direction. For the first time, a naturalized population of North American largemouth bass *Micropterus salmoides* (Lacypide, 1802) was established in our country. Basic characteristics of local populations of various foreign and invasive species were studied and their adaptation characteristics were evaluated according to the environmental conditions in their new habitats.

A valuable contribution is the identifier of 46 invasive alien species of hydrobionts of importance for the EU, containing information and original data for Bulgaria. A 32 language tool (software application) to support decision making on aquatic species invasiveness (AS-ISK) has also been developed.

Second: Rare and endangered ichthyological species;

An important contribution in this direction is the presented data on length-weight relationships (LWR), Fulton coefficient (K) and relative fitness factor (Krel) for main sturgeon species from the Danube River. The food spectrum of four species of sturgeon fish (*H.huso, A. ruthenus, A. stellatus and A. gueldenstaedtii*) was studied, which provides the first comparative data in over 50 years about the changes in the food spectrum of sturgeon fish in the Bulgarian section of river Danube.

Third: Approaches to ensuring and restoring river connectivity;

I highly appreciate the detailed and in-depth analysis and assessment of hydropower impacts on ecosystems and the ecological status of rivers. The package of mitigating measures to reduce the negative impact of hydroelectric power plants on the environment, in which the measures are systematized according to the target group of significant impacts - fragmentation, hydropeaking, water quality, changes in the landscape, is valuable from a practical point of view and currently important in the application of the HEP. An objective methodology has been developed for an informed, transparent and objective assessment of the admissibility for the construction of new hydropower plants.

Fourth: Aquaculture;

Of complex importance is the first comprehensive economic, social, ecological and market analysis of the development of the Aquaculture sector in Bulgaria. The main reasons for the small production volumes and value of aquaculture in our country, as well as for the low consumption of fish and fish products compared to other European countries, have been identified. Key elements of aquaculture production, which can have negative effects on the environment and which, accordingly, need to be subject to control and prevention, are systematized. An original methodology for determining the places, quantities and methods of stocking with trout fish has been proposed, which can be applied in the implementation of national regional fish farming plans, management plans of national and natural parks.

3.3. Scientific research and educational projects

Associate Professor Uzunova has participated in 15 national and 6 international scientific and educational projects financed by national and international funds. She was the head of 10 national projects. Her knowledge of ecology and conservation of aquatic ecosystems makes her a sought-after expert. Associate Professor Uzunova participated in the preparation of practical assessments and reports on the impacts of hydropower plants on water ecosystems and the proposal of mitigating measures to reduce their negative impact on the environment.

With these projects, she has significantly contributed to the improvement of the MTB of the "aquacultures" Department of General and Applied Hydrobiology for educational and research purposes. Together with the students and on a voluntary basis, she maintains the aquarium at the Faculty of Biology and has created a unique model river for the study of cephalopods. I highly appreciate these efforts of hers to provide a suitable base for teaching and research to the students. Only proactive and dedicated teachers, such as Associate Professor Uzunova, do this. The best thing about her as a future professor is that she does not give up in the face of difficulty and looks for new and more workable solutions to the problems and obstacles that arise.

4. Academic and pedagogical activity of the candidate

This component of the assessment is no less essential in the final decision before the vote, given that it is about filling the academic position of PROFESSOR in a university. In the last five years of her activity, associate professor Uzunova had an average of 436 hours of classroom employment

Behind these numerical data are the development and implementation of the compulsory and optional disciplines - Hydrobiology, Aquaculture, Ichthyology and conservation of fish resources, Ichthyology and sustainable management of fish resources. She has successfully trained 20 masters-diplomas, 1 doctoral student defended before the competition and 1 defended during the competition. She was the head of the Master Progarm "Ecomanagement". There are developed multimedia attractive and meaningful lecture courses and a practical guide to ichthyology. I have witnessed the enthusiasm, skill, desire with which she conducts her practical classes, field practices, practices in fish farms and aqua farms for industrially valuable hydrobionts.

This voluminous, highly content, diverse pedagogical and creative-teaching activity places Associate Professor Uzunova among one of the best graduates, researchers and teachers in the Faculty of Biology, who will leave a recognizable mark in the field of aquaculture and ichthyology. I believe that a school of young researchers and teachers in the field of aquaculture is being formed and can be further developed around it, which is a key direction in the PRU and in the future development of the bioeconomy in the Republic of Bulgaria.

I value teaching and teaching contributions as significant and equal in terms of future response in society to scientific and research contributions. Especially taking into account that every discovered scientific innovation in the field of aquaculture and ichthyology is directly implanted as educational content in the disciplines taught by associate professor Uzunova. I have a long-term and personal impression of it.

5. Expert activity

Associate Professor Uzunova is a respected, sought-after expert in the field of ichthyology and aquaculture. She has participated in the preparation of expert assessments on biodiversity, assessments of compatibility of investment plans, inventory, management and monitoring of protected fish species, etc.

6. Summarizing commentary, personal impressions, critical notes and recommendations

The analysis made so far of the professional development of associate professor Uzunova shows that during her almost 26 years of work experience, she has developed as a teacher and researcher at Sofia University with a clear profile and high qualifications, fully corresponding and coinciding with the theme of the announced competition for PROFESSOR. The active publication activity in terms of volume, content and quality meets and exceeds the requirements for holding the position of PROFESSOR in the Faculty of Biology.

Research activity is implanted in the candidate's diverse teaching and learning activities, which is the main requirement of research universities, such as SU. From this point of view, I once again emphasize the value of having precisely such academic personnel grow in SU.

From a substantive point of view, I assess the candidate's research and teaching contributions as directed in key directions in the protection of bioresources and the development of those parts and industrial directions in the bioeconomy that will contribute to greater use of aquaculture in the lives of Bulgarians and Europeans. citizen.

I have had personal impressions of Associate Professor Uzunova since way back in 1996. I had the opportunity to work with her in an educational aspect for a long time in one department. She is a creatively fruitful, result-oriented, combinative, demanding partner, persistent person and person, realistic, innovative thinker. The best thing about her, as a future professor, is that she does not give up in the face of difficulties and looks for new and more workable solutions to the problems and obstacles that arise. In the course of her academic growth, she developed within herself dialogicity, the ability to listen more and reconsider the opinion of her colleagues, which, in my opinion, is a valuable personal transformation, with great opportunities for the Department of general and applied hydrobiology team. I appreciate Associate Professor Uzunova's breadth and complexity of thinking and I believe that she will make an innovative school of aquaculture, where she will introduce new, more modern methods, approaches and complex solutions and teach young followers of good research and biomanagement practices.

7. Conclusion

Based on the above analysis of the tender documentation presented, and from my long-term impressions of associate professor Uzunova, I believe that she meets the requirements for a PROFESSOR, formulated in the Low of development od academic personel and in the Regulations of the SU. Without a doubt, she is a specialist in the field of hydrobiology with an emphasis on "ichthyology and aquaculture", with a proven place and role in university education in the directions of the competition for PROFESSOR.

In my opinion, this is sufficient argumentation to recommend to the respected Scientific Jury and the Faculty Council of the Faculty of Biology - in accordance with Art. 29 b, paragraph 1, in connection with Art. 29 of Low of development od academic personel, as well as Art. Art. 60 and 61 of the Regulations for its implementation - to vote for the acquisition by an associate professor. Dr. Eliza Petrova Uzunova in the academic position of PROFESSOR.

8/02/2023 Author of the Opinion: Yana Ilieva Topalova

Digitally signed by Yana Ilieva Topalova
Date: 2023.02.08 21:00:57 +02'00'

/Prof. DSc. Yana Topalova/