

STATEMENT

by **Dr. Tsenka Georgieva Chassovnikarova**

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of the materials submitted to the competition for the academic position

of **Associate Professor** of Plovdiv University "Paisii Hilendarski"

In the higher education field **4. Natural Sciences, Mathematics, and Informatics**

professional field **4.3. Biological sciences (Genetics-General and Evolutionary Genetics)**

In the competition for "Associate Professor" announced in State Gazette no. 98 on 19 November 2024, and on the webpage of Plovdiv University "Paisii Hilendarski," to meet the needs of the Department of Developmental Biology at the Faculty of Biology, Assistant Prof. Dr. Penka Lazarova Vasileva from the Department of Developmental Biology, Faculty of Biology at PU participated as a candidate.

1. General presentation of the procedure and the applicant

1.1. General presentation of the materials received

By Order No. RD-22-442 of 18 February 2025 of the Rector of Plovdiv University "Paisii Hilendarski" (PU), I have been appointed as a member of the scientific jury of the competition for the academic position of **Associate Professor at PU** in the field of higher education **4. Natural Sciences, Mathematics, and Informatics**, professional field **4.3. Biological Sciences (Genetics-General and Evolutionary Genetics)** was announced to meet the Department of Developmental Biology's needs at the Faculty of Biology of PU.

Only one candidate has submitted documents for participation in the announced competition: Prof. Assist. **Dr. Penka Lazarova Vasileva** from the Department of Developmental Biology, Faculty of Biology, PU.

Presented by Prof. Assist. Dr. Penka Vasileva's set of materials on paper and electronic carrier follows the Regulations for the Development of the Academic Staff of PU, and includes the following documents: request to the Rector to the Rector for admission to the competition; CV according to European format; a diploma of higher education with an acquired educational qualification degree "Master" - original; diploma for educational and scientific degree "Doctor" – original; list of scientific papers; scientific papers (copies of publications); list of citations; statement of compliance with minimum national requirements; statement of compliance with additional faculty requirements; annotations of the materials under Article 65(1) of the Regulation for development of academic staff of University of Plovdiv “Paisii Hilendarski” (in Bulgarian) with an extended habilitation reference; annotations of the materials under Article 65 (1) of the of the Regulation for development of academic staff of University of Plovdiv “Paisii Hilendarski” (in English) with an extended habilitation reference; self-evaluation of scientific contributions; declaration of originality and authenticity of the attached documents; certificate of employment; documents for academic work; documents according to the additional requirements of the Faculty of Biology (FB); a set of paper documents from item 1 to item 14; a set of electronic documents from item 1 to item 14.

The candidate, Dr. P. Vassileva, has submitted 43 scientific works, including 1 monograph, 2 textbooks and teaching aids, and 40 research papers. A total of 18 scientific works that are outside the dissertation and the competition for the position of senior assistant professor are accepted for review; additionally, 2 textbooks and 10 research projects are considered in the final evaluation. Nine research papers related to the dissertation and 14 outside the competition's scope are not reviewed. The distribution of the scientific papers by relevant categories, both domestically and internationally, is as follows: indicator C - habilitation paper (monograph), and indicator D - 17 scientific papers, of which 1 is in Q1, 6 are in Q3, and 10 are in Q4.

1.2. Brief biographical details of the applicant

Dr. Vassileva graduated from the Faculty of Biology at PU in 1996 as a Master Biologist, specializing in University Biology, Genetics, and Microbiology. From 1999 to 2003, she was a full-time PhD student at the Institute of Fisheries and Aquaculture in Plovdiv at the Agricultural Academy, where she earned the educational and scientific degree of "Doctor. " Her dissertation topic was "Study of some reproductive and morphological characteristics of the lake crayfish *Astacus leptodactylus* Eschscholz, 1823 as an object of aquaculture. " From 2002 to 2009, Dr. Vassileva worked at the Institute of Fisheries and Aquaculture, attaining the degree of Research Associate I. Since 2010, she has been part of the Department of Developmental Biology at the Faculty of Biology of the University of Physical Sciences, initially serving as a Senior Biologist and currently as a Senior Assistant Professor.

2. General description of the applicant's activities

2.1. Evaluation of the candidate's teaching and pedagogical activity and preparation

Dr. P. Vassileva has 14 years of teaching experience in the Department of Developmental Biology at the Faculty of Biology of Plovdiv University. She has lectured and taught in five disciplines: Theory of Evolution, Theory of Evolution and Theoretical Biology, General Biology, Cell Biology, and Genetics. In graduate courses, she has delivered lectures, basic seminars, and workshops on "Contemporary Aspects of Breeding Genetics," "Foundations of Classical Genetics," and "Practicum on Cytotoxicity and Mutagenicity Reporting Methods." These extensive horizons require comprehensive knowledge, skills, and competencies. Dr. Vassileva has also contributed to preparing two textbooks for students: "Genetic Bases of Behavior" and "Textbook of Population Genetics. " This allows me to highly appreciate the candidate's teaching qualities, activities, and achievements. This is confirmed by the nine bachelor's theses awarded under the guidance of Dr. Vassileva, which were successfully defended. In addition to her effective teaching practices, the candidate's organizational skills in managing and coordinating key teaching activities and several scientific events and forums deserve recognition.

2.2. Evaluation of the candidate's scientific and applied activities

In the current competition for the academic position of Associate Professor, Dr. Vassileva presents one scientific monograph and 17 scientific papers, which are refereed and indexed in well-known databases of scientific information (Web of Science and Scopus), with a total impact factor of 7.24. All presented scientific publications are co-authored and written in English. In two (12%) of the scientific articles, the candidate was the lead author; in five

(29%), she was the second author. This confirms the leading role of Dr. Vassileva in the presented scientific output (41%) and highlights the necessity of teamwork in conducting complex genetic research. Out of the 17 papers, seven (41%) were published in *Acta Zoologica Bulgarica*, two in *Ecologia Balkanica*, two in the *Journal of IMAB*, and one each in *Apidologie*, *OBM Genetics*, *Comptes Rendus de L'Academie Bulgare des Sciences*, *Bulgarian Journal of Agricultural Science*, *Journal of Central European Agriculture*, and *Acta Scientiarum - Biological Sciences*. Only 23% of the articles lack an impact factor but have SJR or JCI ratings. The journals' impact factors (IF) range from 2.4 to 0.31. According to Dr. Vassileva's Scopus profile, her h-index is 5, with 18 refereed papers and 49 citations (<https://www.scopus.com/authid/detail.uri?authorId=56618290700>).

The scientific metrics of the candidate meet the minimum requirements of Article 26 of the Law on Research and Development and the Regulations on the Conditions and Procedure for the Acquisition of Scientific Degrees and Titles and for the Occupation of Academic Positions at PU, and even exceed them: indicator A - 50 points / out of 50 points, indicator C - 100 points / out of 100 points, indicator D - 235 points / out of 220 points, and indicator E - 134 points / out of 50 points, or a total of 519 points out of the required 400. These scientific metrics provide grounds to evaluate the candidate's scientific production as fully relevant for the position of Associate Professor.

The candidate's scientific activities focus on four research directions: mutagenicity and cytotoxicity of xenobiotics in model test systems, intra-population and inter-population variability during ontogeny, and reproductive health in humans - genetic and environmental components. Among these, I can highlight the following significant contributions:

A. Fundamental Scientific Contributions

- *Original*
 - ✓ For the first time, a reliable biomarker to assess the extent of DNA damage in honeybee spermatozoa has been developed to assess the genotoxicity of environmental factors;
- *Confirmatory*
 - ✓ The mutagenic and cytotoxic effects of various food additives, pesticides, heavy metals and organic pollutants have been demonstrated in plant and animal test systems;
 - ✓ The possibility of using isoenzyme systems as genetic markers to characterize and differentiate populations of the genus *Messor* in Bulgaria and Europe has been demonstrated;
 - ✓ Intrapopulation sexual dimorphism in *Astacus leptodactylus* and gene expression of soluble protein loci and isoenzymes in *Reticulitermes lucifugus* during ontogeny of both species have been established;
- *Methodical*
 - ✓ Developed an informative fluorescence test with acridine orange, to determine potential male fertility;

B. Scientific and applied contributions

- *Original*
 - ✓ The lack of genotoxicity and low cytotoxicity of oxalic acid and its application as an alternative method against varroasis in beekeeping has been established;
 - ✓ Developing criteria based on the variability of *Bombyx mori* breeds from different regions to optimize breeding programs aimed at increasing silk yield;

- Confirmatory
 - ✓ Evaluation of the risks and benefits of certain food additives, due to conflicting scientific results, concerning food safety and public awareness;
 - ✓ Analysis of environmental risks to male reproductive health and development of prevention strategies.

All 67 citations of Dr. Vassileva's scientific works submitted for the competition are from scientific papers indexed in Web of Science and Scopus. This indicates a wide response from the scientific community and significant interest in the candidate's scientific contributions. Among the citations, 18 (27%) are from Q1-ranked journals, 5 (7.5%) from Q2-ranked journals, 19 (28%) from Q3-ranked journals, and 12 (18%) from Q4-ranked journals. The remaining 11 articles have an SJR rank. Of the 67 citations, 20 (30%) are attributed to Bulgarian authors, including only one colleague of Dr. Vassileva.

3. Summary comment and personal impressions

The analysis of Dr. Vassileva's professional development shows that she has shaped herself as a researcher with a distinct profile and high qualifications, fully corresponding to and coinciding with the subject of the announced competition for "Associate Professor". Her active publication activity in terms of volume, content and quality meets the requirements for the position. I assess the candidate's research activity as extremely complex. She is working on important problems of intra- and inter-population variability of animals, gene- and cytotoxicity of xenobiotics in plant and animal organisms, and reproductive health of humans. Dr. Vassileva also fully satisfies the additional requirements of the Biological Faculty at PU for developing academic staff - 2 textbooks/teaching aids, 9 successfully defended graduates, 14 years of teaching experience, and a participant in 10 scientific projects.

CONCLUSION

The documents and materials presented by Dr. Penka Vassileva comply with all the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria (LADAPB), the Regulations for the Implementation of the LADAPB, and the relevant Regulations of "Paisii Hilendarski" University. The candidate in the competition has submitted a sufficient number of scientific works published after the materials used to defend the PhD. The candidate's works contain original scientific contributions that have received international recognition, a representative portion of which have been published in journals by internationally recognized academic publishers. Dr. Vassileva's scientific and teaching qualifications are unquestionable. After reviewing the materials and scientific works presented in the competition and analyzing their significance and contributions, I find it justified to give my positive assessment and to recommend the Scientific Jury prepare a report-proposal to the Faculty Council of the Faculty of Biology at PU for the election of Dr. Penka Lazarova Vassileva to the academic position of "Associate Professor" in the fields of higher education 4. Natural Sciences, Mathematics and Informatics, professional field 4.3. Biological Sciences (Genetics-General and Evolutionary Genetics).

29.03. 2025

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(Assoc. Prof. Dr. Tsenka Chassovnikarova)