

STATEMENT

by

Assoc. Prof. Dr. Iliya Petrov Bivolarski, PhD,
Department of "General and Clinical Pathology"
Medical University – Plovdiv,

in his capacity as a member of the scientific jury, in accordance
with protocol No. 31 / 02.12.24 and Order No. R-109-437 / 05.12.2024 by the
Rector of the Medical University of Varna,

in relation to the competition announced in the State Newspaper No. 85 / 08.10.2024 for the academic position of "Associate Professor" in the field of "General and Clinical Pathology", professional field 7.1 Medicine, higher education area 7. Healthcare and Sports, for the Department of "General and Clinical Pathology, Forensic Medicine, and Deontology" at the Faculty of Medicine, Medical University of Varna, and the Clinic of "General and Clinical Pathology" at UMHAT "St. Marina" EAD, Varna, with additional conditions: candidates must possess a specialty in healthcare "General and Clinical Pathology" and a Doctoral Degree in the doctoral program "Pathological Anatomy and Cytopathology".

The competition materials from Assoc. Prof. Dr. Nadezhda Todorova Stefanova, PhD, have been submitted in electronic format, including all the necessary documents in accordance with the Health Care System Development Act and the Regulations for Academic Staff Development at Medical University – Varna, as well as documents meeting the additional requirements for the competition.

I. Career Development of Dr. Nadezhda Stefanova, PhD

Dr. Nadezhda Todorova Stefanova was born in Pavlikeni. In 2011, she graduated from the Medical University of "Prof. Dr. Paraskev Stoyanov", Varna, in the specialty of "Medicine". From 2011 to 2012, she was a part-time assistant

at the Department of "General and Clinical Pathology, Forensic Medicine and Deontology" at Medical University – Varna. From 2012 to 2018, she served as an assistant, and since 2018, as a senior assistant in the same department.

From 2012 to 2017, she was a doctoral student at the Department of "General and Clinical Pathology, Forensic Medicine, and Deontology", in the specialty "Pathological Anatomy and Cytopathology". Dr. Stefanova's dissertation is titled "Expression of Autophagy and Necroptosis Markers in Colorectal Cancer" and was successfully defended. Since 2011, Dr. Stefanova has been working as a specializing doctor at UMHAT "St. Marina" EAD – Varna. In 2019, she obtained a specialization in "General and Clinical Pathology".

II. Evaluation of Dr. Nadezhda Stefanova's Scientometric Indicators

For the current competition, Dr. Stefanova submitted her habilitation work – a monograph titled "Myeloproliferative Neoplasms: Past, Present, and Future", with a volume of 193 pages. Her academic record includes 11 publications and reports, published in scientific journals, refereed, and indexed in globally recognized scientific databases. Dr. Stefanova also presents 11 other publications and reports, published in non-refereed journals, with peer review or in edited collective volumes. Beyond the minimum scientometric requirements for the academic position of "Associate Professor", she has submitted one article, which was awarded 2.73 points. The total number of points from all indicators for Dr. Stefanova is 203.02, surpassing the required minimum of 200 points.

In addition, Dr. Stefanova has participated in 23 national scientific forums, 4 international forums, and 4 forums without published abstracts.

Dr. Stefanova has 4 citations in publications indexed in internationally recognized scientific databases.

She has participated in 7 scientific projects funded by the "Science" Fund and one project funded by the "Research" Fund.

III. Evaluation of the Contributions of Dr. Nadezhda Stefanova's Scientific Works

Dr. Stefanova's contributions are related to her dissertation, the presented habilitation work, and full-text publications in scientific journals. These contributions are grouped into six areas: alternative molecular mechanisms of cell death and cell survival, diseases of the hematopoietic system, rarely diagnosed diseases, experimental morphology, infectious diseases, and general biological processes.

In the first group, her dissertation "Expression of Autophagy and Necroptosis Markers in Colorectal Cancer" is original. The study of the complex clinicopathological, molecular-genetic, and immunohistochemical characteristics of autophagy and necroptosis in colorectal cancer patients, as well as the immunohistochemical expression of Beclin-1 and RIP3, establishes a connection between autophagy, necroptosis, and clinical-pathological parameters. Contributions with practical applications in this group concern the correlation between high Beclin-1 expression, low cytoplasmic, and high nuclear expression of RIP3 as a necroptosis marker, and low overall survival in colorectal cancer patients.

In the second area—hematopoietic system diseases—the monograph provides a comprehensive description of myeloproliferative neoplasms, including polycythemia vera, essential thrombocythemia, and primary myelofibrosis. It outlines future treatment directions and highlights challenges in diagnosis. Original contributions include detailed and illustrated findings on bone marrow changes derived from her own research materials.

In the third group—rare diseases—Dr. Stefanova describes cases of anorectal melanoma, highlighting its pathological findings, mutation status, and their connection with tumor behavior and patient prognosis. She also describes a rare case of spinal paraganglioma, confirmed by immunohistochemistry, a solid pseudopapillary pancreatic tumor, and primary Hodgkin lymphoma of the thyroid gland.

In experimental pathology, Dr. Stefanova has made original contributions, such as studying the molecular mechanism of the anti-apoptotic effect of melatonin in a rat model of gastric injury induced by burning and the restorative effect of fustin isolated from the wood of *Cotinus coggygia* in an experimental model of trinitrobenzene sulfonic acid-induced colitis in rats. Another study

demonstrated the hepatoprotective effect of the flavonoid fustin in a rat model of acute paracetamol-induced toxicity.

In the field of infectious diseases, Dr. Stefanova analyzed morphological changes in the lungs of 27 autopsy cases of clinically severe COVID-19, confirmed by PCR. Contributions include determining the dynamics of early, intermediate, and late histological changes in the lungs during coronavirus damage. Additionally, intermittent histological changes unrelated to the appearance and persistence of symptoms were identified.

Regarding general biological processes, Dr. Stefanova presented an article revealing the bidirectional connections between the pineal gland and the thymus, as well as their common involutional mechanisms. It is noted that the hormones of both glands play roles in antioxidant and anti-tumor defense and in processes of hemostasis, which are linked not only to maintaining normal immune responses and regulating aging but also to the onset of age-associated diseases.

IV. Evaluation of Dr. Nadezhda Stefanova's Participation in Scientific and Teaching Activities

As an assistant and senior assistant, Dr. Stefanova has over 12 years of teaching experience. Data on her teaching workload over the last 5 years shows a yearly teaching load of 250 to 420 hours, which exceeds the required 220 hours according to the university regulations. Her teaching is primarily focused on conducting practical pathology classes in both Bulgarian and English for students in the specialties of "Medicine," "Dental Medicine," and "Pharmacy." Dr. Stefanova was the course leader for 4th-year students in English-taught programs from 2016 to 2023. She is a member of the Bulgarian Medical Association, the Bulgarian Society of Pathology, the European Society of Pathology, and the Union of Scientists in Bulgaria – Varna branch.

Conclusion: Dr. Nadezhda Stefanova's career development, her teaching and research activities, and her scientometric indicators fully meet the requirements of the Academic Staff Development Act of Bulgaria and the regulations of the Medical University of Varna for the academic position of "Associate Professor." She also meets the additional requirements for the

competition, including the specialty in "General and Clinical Pathology" and a Doctoral Degree in "Pathological Anatomy and Cytopathology."

This provides a strong basis for me to cast a POSITIVE vote for the appointment of Dr. Nadezhda Stefanova, PhD, to the academic position of "Associate Professor."

February 22, 2025

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(Assoc. Prof. Dr. I. Bivolarski, PhD)