

PEER REVIEW

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**Member of the Scientific Jury pursuant to Order No. P-109-90 from 21.03.2024
of the Rector of Medical University „Prof. Dr. Paraskev Stoyanov“, Varna**

Regarding: Procedure for acquiring an academic position „Professor“ in the field of higher education 7. Health and Sports, professional direction 7.4 Public Health, of specialty „Management Public Health“ for the Training Sector „Medical laboratory assistant“, Medical College – Varna.

1. Information about the procedure

Pursuant to Order No. R-109-90/21.03.2024. of the Rector of the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna I am included as an internal member of the Scientific Jury under the procedure for occupying the academic position "Professor" in the specialty "Public Health Management", professional direction 7.4. Public health, area of higher education 7. Health care and sports for the Training Sector „Medical laboratory assistant“, Medical College – Varna.

According to Protocol No. 1/04.04.2024. from the first meeting of the Scientific Jury, I have been appointed to prepare a review of the procedure.

One candidate took part in the announced competition – Assoc. Prof. Emiliya Petrova Georgieva, Ph.D.

The candidate has precisely submitted all necessary documents for participation in the competition, corresponding to the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Rules for its Application and the Rules for the Development of the Academic Staff at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna.

2. Resume of the candidate's career development

Assoc. Prof. Emiliya Georgieva, PhD acquires a Professional Bachelor's degree in Medical College - Varna, specialty in „Medical laboratory assistant" in 1995. In 2008 graduated in a bachelor's program in the specialty "Health Care Management", and later (2013) in a master's program in the same specialty at the Medical University - Varna. Assoc. Prof. Emiliya Georgieva has also acquired master's degree specialty “Marketing” at affiliate of the Konstantin Preslavsky University of Shumen in the city of Varna.

In 2016 she successfully defended her dissertation at the Department of Health Care of the Faculty of Public Health at Medical University - Varna on the topic „Availability of medical

laboratory services in general medical practice in North-Eastern Bulgaria“ and acquired the degree PhD in the specialty „Health care management“

In 2023 Assoc. Prof. Emiliya Georgieva completed a specialization in „Public Health“.

For the period of May 2023 – June 2023 successfully participated in specialization "Good practices for those working with bio-laboratory technologies" at the University of Turin, Italy.

The professional development of Assoc. Prof. Emiliya Georgieva started as a Medical laboratory assistant at the the University Hospital "St. Marina" Varna (1995) and continues as a medical representative of laboratory equipment, consumables and reagents for scientific activity in SOFBIOLIFE - BIOMEDIKA OOD (2008-2012).

Since 2012 Emilia Georgieva is a practical teacher at the "Medical Laboratory Assistant" Training Sector of the Medical College - Varna, and since 2018 holds the academic position of "Associate Professor". From 2021 Assoc. prof. Emiliya Petrova Georgieva, PhD is the Deputy Director of the Medical College, "Career Development, Quality and Accreditation".

3. General description of the submitted materials

The submitted competition materials for the academic position "Professor" in the specialty „Management Public Health“ in the field of higher education 7. Health and Sports, professional direction 7.4 Public Health according to the Development of Academic Staff in Republic of Bulgaria, the Rules for its implementation and the Rules and acquirement of scientific degrees and holding academic positions at Medical University „Prof. Dr. Paraskev Stoyanov” – Varna.

The documents submitted by the candidate include: CV; copies of diploma for the respective specialties and the doctoral degree; diploma for the academic position "Associate Professor"; certificate of recognized specialty; monographic work; abstracts of scientific works for the competition; a list of publications and a copy of them; reference from the University Library of a Varna Medical University for the publications and citations meeting the minimum national requirements, full-text publications, outside the minimum equirements for scientometric indicators and the additional requirements defined in these regulations (accompanied by evidence) and other documents certifying the indicators, according to the regulation for acquiring an academic position „Professor” at the Varna Medical University.

The submitted reference shows that the candidate for the academic position of "Professor" Assoc. Prof. Emilia Petrova Georgieva, PhD meets all the conditions and fully covers the scientometric requirements for occupying the academic position of "Professor" (Table 1).

Table 1. Compliance with the scientometric requirements of MU-Varna for occupying the academic position "Professor"

A group of indicators	Content	Professor (points)	Assoc. Prof. Emilia Georgieva
A	Indicator 1: Dissertation work for the award of the educational and scientific degree PhD	50	50
B	Indicators 3 or 4: Monographic work	100	100

Г	Sum of indicators 5 to 9: Publications	200	349.06
Д	Sum of indicators 10 to 12: Citations	100	100
Е	Sum of the indicators from 13 to the end	100	179.41

4. Characteristics of the monographic/habilitation work

Monographic work “Rapid tests, qPCR systems and mobile applications – the key in the fight against the SARS-CoV-2 pandemic”, is an in-depth analysis by the author Emilia Georgieva on the problems affecting current aspects, modern models and approaches for improved and accessible laboratory diagnostics and possibilities of mobile technologies to ensure better and more timely health care.

In terms of content, the work is developed in three chapters. An overview of modern methods for rapid diagnosis of infectious diseases is presented, emphasizing the importance of timely detection and diagnosis. The main focus is on the development of Point-of-Care (POC) devices, mentioning various innovative technologies: devices on a chip (LOC), Lab-on-a-Disc (LOAD) devices, microfluidic paper-based analytical devices (μ PAD), etc. .

The monograph examines mobile health, which includes detailed descriptions of contact tracing apps, quarantine apps, symptom monitoring apps, and those that provide information. Special attention is paid to the management of the SARS-CoV-2 pandemic. The limitations we face are discussed, as well as future perspectives and directions for development. The paper highlights the importance of innovations in medical technology and mobile health to effectively deal with such crises.

For the development of his monographic work, the author relies on 262 sources, of which 19 are in Cyrillic. In a volume that meets the requirements, Assoc. Prof. Emilia Georgieva researches and investigates problems that arise from the need for easier access to health care that provides the overall needs of the patient. In this sense, the monographic work is up-to-date and resolves important issues related to modern healthcare. Assoc. Prof. Emilia Georgieva skillfully brings out the discussion questions related to the future and prospects of mobile health. The monograph provides the framework in which SARS-CoV-2 testing has a key role in generating reliable surveillance data, achieving control of community transmission of the virus, preventing transmission in high-risk situations, and limiting re-infection. introduction of the virus into communities that have achieved sustained control of transmission.

In the concluding part, based on our own research, new directions are provided for the future of infectious disease management and the contribution of technology to the prevention and control of infectious pandemics such as COVID-19.

The monograph developed by Assoc. Prof. Georgieva is a valuable guide in the field of medical laboratory and health care management methods. The work presents important and current topics related to the improvement of health care through modern diagnostic approaches and mobile technologies, while providing valuable information for specialists in this field.

5. General characteristics of the candidate's research and applied scientific activity

The publications and references submitted for participation in the competition prove the high quality and international recognition of the scientific production of Assoc. Emilia Georgieva, PhD.

46 titles were submitted for participation in the competition. Their distribution in scientometric aspect is as follows:

1. Included in a sample certificate proving the fulfillment of the minimum requirements for occupying the academic position of "Professor", according to the Development of Academic Staff in Republic of Bulgaria, the Rules for its implementation (41):
 - Criterion A, Indicator 1, Dissertation work for the award of PhD - 1;
 - Criterion B, Indicator 3, Monographic (habilitation) thesis - 1;
 - Criterion G, Indicator 7, Publications and reports in scientific publications, referenced and indexed in world-renowned databases with scientific information – 11;
 - Criterion G, Indicator 8, Publications and reports in non-refereed journals with scientific review or published in edited collective volumes - 23;
 - Criterion G, Indicator 9, Published chapter of a collective monograph – 1;
 - Criterion E, Indicator 20, University textbook - 1;
 - Criterion E, Indicator 21, University textbook – 3.
2. Outside those participating in the evidence for meeting the minimum requirements for the academic position of professor (5):
 - publications related to the dissertation for PhD -3;
 - full-text publications in scientific journals, refereed and indexed - 2;

All publications are correctly described and attached in full in electronic format to the competition materials.

The journals in which Assoc. Prof. Emilia Georgieva have the following impact factor (IF), according to the Academic Reference:

- FARMACIA, 2012 – IF-1.433
- Biotechnology & Biotechnological Equipment, 2023 - IF-1.764

Qualitative characteristic of the scientific research work of Assoc. Emilia Georgieva, PhD.

Assoc. Prof. Emilia Georgieva, PhD has systematized her scientific works after holding the position of Associate Professor in five areas:

- Introduce innovative technology solutions to improve the timing of and access to medical laboratory services;
- The role of the medical laboratory technician as part of the interdisciplinary team during the diagnostic and treatment process;
- Laboratory diagnostics as part of an integrated approach to the diagnosis and control of chronic diseases;

- Investigation of the antimicrobial effect of natural products (essential oils) alone and in combination with established antibacterial dosage forms;
- New approaches in the fight against antimicrobial drug resistance.

The first direction "Introduction of innovative technological solutions to improve the time and access to medical laboratory services" is presented with 6 titles that analyze the quality of medical laboratory services and their maintenance through new standards. The assessment of the complex management of all types of related activities in the diagnostic process, makes it possible to identify strengths and weaknesses, as well as opportunities for improvement, in order to provide better healthcare.

Analyzes of the effectiveness of the diagnostic process, derive algorithms for evaluating the time for the execution of various activities, as well as the quality of the received diagnostic results. The implementation of new technologies and methods in the diagnostic process includes the use of modern diagnostic devices, software solutions and mobile applications that ensure safety and reliability.

Assoc. Prof. Emilia Georgieva contributes to the clarification of the benefits of the introduction and application of new methods and ROST tests (Routine-Of-Care Testing) in laboratory diagnostics, aimed at increasing diagnostic capabilities.

A series of publications have explored the territorial aspects of access and the observed trends of existing regional disparities in the distribution of resources in outpatient care.

To the second scientific direction "The role of the medical laboratory assistant as part of the interdisciplinary team in the diagnostic and treatment process" are 8 studies that investigate and analyze the professional responsibility of the medical laboratory assistant.

A key role is presented in assisting other medical professionals in performing various tests that are essential to making diagnoses and determining treatment. Effective coordination and collaboration among team members to ensure quality and timely healthcare is explored.

Assoc. Prof. Georgieva, in a considerable volume of titles, highlights the need to create an atmosphere of trust, support and empathy in the process of work of medical staff from different sectors and departments in the hospital environment. The regulations and legal constraints arising from the specificity of health systems, which make the labour market for health professionals accessible only to participants with high professional qualifications, are analysed.

In the third direction „Laboratory Diagnostics as Part of an Integrated Approach to the Diagnosis and Control of Chronic Diseases" analyses the interaction between different sectors in health care to achieve better health care efficiency. The effectiveness of integrated teams providing care for patients with chronic diseases and the assessment of their needs are examined. The basic care needed for these patients is analysed, as well as the need for specific skills and psychological support.

Publications included in the strand explore the challenges of the COVID-19 pandemic and highlight the importance of diagnostics and the need to develop rapid tests for timely control of different infectious agents.

Issues related to the use of rapid tests and diagnostic methods for disease control and containment are also addressed.

In the fourth direction the antimicrobial effect of natural products (essential oils) alone and in combination with established antibacterial dosage forms is reviewed. The potential of natural products for both menopausal symptom relief and antimicrobial applications has been explored.

Long-term use of these products can lead to significant health benefits, and thyme and oregano essential oils have promising therapeutic applications in fighting bacterial and fungal infections. A series of publications evaluating the minimal bactericidal concentration of natural products such as thyme and oregano oils against the pathogens *S. aureus*, *E. coli* and *C. albicans* demonstrated their significant antimicrobial potential. These results support the use of natural products as effective antimicrobial agents in medical practice and open opportunities for future research and development of new therapeutics.

The publications included in **the fifth direction** "New approaches in the fight against antimicrobial drug resistance" are aimed at analyzing innovative approaches for effective management and control. The importance of rapid laboratory tests in daily diagnostics has been proven. Controlled studies that demonstrate the utility of using procalcitonin as a biomarker for the recognition and monitoring of infectious conditions in medicine are reviewed. The use of specialized algorithms to interpret its levels helps medical professionals make informed decisions about the diagnosis, prognosis and treatment of patients.

I accept the scientific contributions indicated systematically in the applicant's reference.

Assoc. Prof. Emilia Georgieva, participates in international, national and regional scientific forums. The works have been published in renowned scientific publications abroad and in our country, such as: Journal of IMAB, Scripta Scientifica Medica, Social Medicine, Health Economics and Management, Varna Medical Forum, Journal of Medical College - Varna, etc.

The competition documents include a reference for 9 citations, of which 5 are in scientific publications, referenced and indexed in world-renowned databases with scientific information.

Associate Professor Emilia Georgieva, Ph.D. is a member of a research team of completed project №19026 "Determination of antimicrobial activity of newly synthesized nitroimidazole derivatives with potential application in transplant medicine", financed by the "Science" fund of MU-Varna.

Assoc. Prof. E. Georgieva has carried out scientific supervision of two doctoral students who have successfully defended their degrees.

6. Educational and teaching activity

It is clear from the presented documents that Assoc. Prof. Emilia Georgieva, PhD has a 10-year scientific and teaching experience at the Medical University - Varna. Participates in the teaching of the "Medical Laboratory Assistant" specialty at the Medical College - Varna. The study load during the last 4 academic years (from 2019/20 to 2022/23) is an average of 1100 hours.

7. Personal impressions

I know personally the candidate Assoc. Prof. Emilia Georgieva from our joint scientific teaching activity. I highly appreciate her purposefulness, precision, diligence and aspiration for improvement. Assoc. Prof. Georgieva stands out with exceptional loyalty, honesty in relationships and research activities.

8. Conclusion

On the basis of the positive evaluation and analysis of the overall scientific and pedagogical activity, together with the criteria of the Academic Staff Development Act in Bulgaria and the Regulations of the Medical University - Varna, Assoc. Prof. Emilia Petrova Georgieva, PhD shows that she meets the scientific-metric requirements for the acquisition of the academic position of Professor.

The candidate in the competition shall submit the required number of scientific papers, highlighting significant theoretical and applied contributions. The research activity represents significant achievements in science and practice.

Having read in detail the documentation provided to me and made an analysis of the professional qualifications, research and teaching activities of the participant in the competition for the academic position of Professor in Public Health Management, I consider that Assoc. Prof. Emilia Petrova Georgieva, PhD fully meets all the requirements.

All this gives me the reason to propose Assoc. Prof. Emilia Petrova Georgieva, PhD to take the academic position of „Professor " in specialty „Public Health Management“ in the field of higher education 7. Health and Sports, professional direction 7.4 Public Health in Medical University „Prof. Dr. Paraskev Stoyanov“, Varna.

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Varna

Peer review written by:.....

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