

## ACADEMIC REVIEW



COMPETITION FOR THE ACADEMIC POSITION OF "ASSOCIANT PROFESSOR"

IN THE FIELD OF HIGHER EDUCATION 7. "HEALTH AND SPORTS",

BY PROFESSIONAL FIELD 7.1. "MEDICINE" and  
SCIENTIFIC SPECIALTY "CLINICAL LABORATORY",

ANNOUNCED IN SG, NO. 45 / 17.06.2022,

FOR THE NEEDS OF THE FACULTY OF MEDICINE

at "Prof. Dr. Asen Zlatarov" University - Burgas

Admitted candidate for the competition - one

Dr. Mariyana Georgieva Yordanova-Vasileva, PhD.

from

Prof. Dr. Margaritka Ivanova Boncheva, PhD, Head of Clinical Laboratory at UMBAL "Prof.  
Alexander Chirkov" EAD- Sofia,

external member of the scientific jury, appointed by Order No. RD-274/ 15.09.2022.

of the Rector of the University "Prof. Dr. Asen Zlatarov" - Burgas

With Protocol No. 1 of 03.10.2022 of the First meeting of the scientific jury, I have been selected  
as a reviewer for the contest.

### **Review of submitted documentation**

Dr. Mariyana Georgieva Yordanova has submitted all the necessary documents, carefully arranged according to the "Regulations for the conditions and procedure for acquiring scientific degrees and holding academic positions" at the University "Prof. Dr. Asen Zlatarov"-Burgas.

The candidate, Dr. Mariyana Georgieva Yordanova-Vasileva, has submitted a complete list of her scientific publications of 38 titles and a checklist for participation in the current competition, including 33 scientific works after obtaining the ONS "Doctor", of which one monograph and 32 full-text scientific publications. I accept the scientific works for the competition for review and emphasize that they are beyond the publications related to the dissertation work.

It is evident from the submitted documents that the professional qualification and quantitative indicators of the candidate's scientific development meet the requirements for holding the academic position of "Associate Professor" in higher education. 7. Health care and sports, professional direction 7.1. Medicine, scientific specialty "Clinical Laboratory".



### **Brief biographical data**

Dr. Mariyana Georgieva Yordanova-Vasileva was born in 1960 in Varna, where she finished her secondary education at the V high school in 1978. In 1987, she graduated with a "Medicine" specialty at the Higher Medical Institute in Varna. In 1995, she acquired a specialty, "Internal Disease", at Medical University-Sofia, and in 2004, she received a "Clinical Laboratory" specialty. Starting her professional career, she worked successively as a shop doctor, as a resident doctor in the II Internal Department of the Municipal Hospital, Shumen, as a radiobiologist at the hygienic-epidemiological inspection -Varna, and from 2004 at the Medical Military Academy-Varna, as the head of the Department of Clinical Laboratory and Immunology. Due to her rich clinical experience, from 2007 until now, she was additionally the head of several laboratories in pre-hospital care: DCC "St. Ivan Rilski"-Varna, DCC "Chaika"-Varna, DCC "St. Marina"-Varna, and MDL "Stelt2013"-Dobrich.

In 2002, Dr. Yordanova was appointed as a part-time lecturer in Radiobiology at Varna Medical College, specializing in X-ray laboratory technician. He worked as a part-time assistant from 2011 to 2013 in the Department of "General Medicine and Clinical Laboratory" at the University of Varna. From 2011–2015, he conducted a lecture course on Radiobiology in systems for renewal of permission to work in an environment of ionizing radiation at Naval Academia-"Nikola Vaptsarov"-Varna.

In 2017, she was enrolled as a PhD student in an independent form of study at Medical University-Varna. In 2021, she successfully defended the educational and scientific degree "Doctor" in the scientific specialty "Clinical Laboratory" with a dissertation on the topic "Comparative study of biochemical markers in different biological matrices in patients with chronic diseases of the gastrointestinal tract". We have witnessed constructive and progressive growth both professionally and in scientific and teaching aspects.

She speaks English and Russian. Has computer literacy in Word, Excel, PowerPoint, Photoshop, and statistical programs.

### **Research activity**

Dr. Mariyana Georgieva Yordanova-Vasileva participated in the competition with an abstract of a dissertation work for the acquisition of the ONS "Doctor" and 33 scientific works, distributed as follows:

- One monographic (habilitation) work titled "Saliva Diagnosis Past, Present, and Future." "Laboratory diagnostics and clinical application" (2022) ISBN 978-609-241-238-8 of "Steno" publishing house, in which Dr. Yordanova is the independent author.
- One publication and report in scientific journals, referenced and indexed in world-famous databases with scientific information (Scopus and Web of science)
- 31 publications and reports in non-refereed peer-reviewed journals or edited collective volumes of full-text scientific publications, 19 in foreign and 12 in Bulgarian scientific journals.

Ten of the scientific works are independent. Eight have two authors, 8 have three, and 7 have more than three. In 19 of the scientific works (57.6%), Dr. Yordanova is the sole or first author,



and adding those in which she is in second place (15.2%), it becomes clear that she is in the lead position in the majority (72.8%) of the publications, which proves her high personal contribution.

Dr. Yordanova's scientific activity is also proven by her participation in 30 international and national medical congresses and conferences with posters (20) and oral presentations (10), for which a list is presented. Of these, 18 are from congresses abroad, and 12 are from congresses and conferences in the country with abstracts printed in the "Collection of Abstracts".

As the Head of Clinical Laboratory at St. Marina" - Varna and for the implementation of her scientific activity Dr. Yordanova participates in the practical part of the following scientific research projects:

"Investigation of the effect of Aronia melanocarpa fresh fruit juice intake on carbohydrate metabolism and oxidative stress in patients with type 2 diabetes mellitus at different ages" (2014-2016)

"Evaluation of predictors and prognostic indices of clinical course and treatment effect in patients with rheumatoid arthritis" (2014-2018)

"Comprehensive oral diagnosis of children and adolescents with diabetes mellitus and obesity" (2015- 2017)

#### **Citation.**

According to the Central Medical Library - Sofia, Dr. Yordanova has five citations in scientific journals, refereed and indexed in world-renowned databases with scientific information (Scopus and Web of Science) and ten citations in monographs and collective volumes with scientific peer review and two in Bulgarian publications.

#### **Contributions to scientific works.**

1. Contributions related to the study of saliva as a biological material. Part of Dr. Yordanova's scientific works is related to research and research of an original nature on the biochemical and cellular elements in saliva. She made a significant contribution in proving that saliva is a promising matrix for non-invasive studies, carrying information on local and systemic diseases. Significant contributions of Dr. Yordanova's scientific activity are the study of saliva in healthy individuals, the normal physiological variations in secretion, the biochemical and cellular composition of saliva, as well as the established pathological changes in smoking, patients with Gastrointestinal diseases and persons working in specific conditions (divers). A1, C3 The monograph published by Dr. Yordanova, summarizing the knowledge and her research results on salivary diagnostics, is a valuable work, filling a gap in our country's clinical laboratory and clinical medicine. The monograph can be a valuable learning aid for students, dentists and doctors of various specialties interested in modern methods of diagnosing oral and systemic diseases. C3

The reference limits of the investigated salivary parameters in a representative group of the Bulgarian population have been determined, which in its essence, is a unique study in Bulgaria to date. The data provide laboratory professionals and clinicians with the opportunity for better interpretation and comparability of results across studies and studies of different groups. A1



The main focus of Dr. Yordanova's research is the changes that occur in saliva in inflammatory diseases of the gastrointestinal tract. For the first time in Bulgaria, indicators of OS in saliva and serum in chronic GIT diseases were investigated, and their role in the pathogenesis of the chronic inflammatory process, as well as their potential for distinguishing the phases of activity, was proven. A1, D(7)

A major contribution is the optimization and validation of non-routine methods for quantifying OS parameters (ROS AND AOC), nitrites and sIgA in saliva, enabling their use in future scientific and applied research. A1

## 2. Contributions related to the study of laboratory markers for decompression risk and psychological stress in divers

In several scientific studies, Dr. Yordanova studied the changes in salivary and serum markers in a specific group of persons working in hyperbaric conditions. Salivary changes in decompression sickness after breath-hold dives, as well as those after a dry bar chamber, have been studied. Attention to this professional group is related to the body's adaptive physiological and pathophysiological changes in hyperoxia, concerning its health condition and risk to life, as well as the main safety priorities in diving descents. D(5), OD9, OD6) The established changes in the biochemical and cellular composition of saliva and the relationship with dental status in divers have valuable practical significance as part of a recommended screening program to control their oral health. D(13). The studied markers of stress in divers, related to the more special conditions and risks in their profession, also represent an essential practical contribution, helping to prepare educational and training regimes of descent and decompression. C3, D(14)

Of practical importance is the determination of salivary nitrite as a criterion for nitric oxide levels, their influence from diet and their relationship to the risk of decompression in divers. D(2). A study of oxidative stress in divers, unique for Bulgaria, was carried out using biological material saliva and serum, which helps to clarify some pathophysiological effects under hyperbaric conditions D(5). I believe that research in this direction has a high social significance and contribution to military and naval medicine practice.

## 3. Contributions related to the study of oxidative stress.

Dr. Yordanova's research focuses on determining the indicators of oxidative stress - the production of reactive oxygen radicals (ROS) and antioxidant capacity (AOC), as well as nitrites in two biological materials - serum and saliva. It can be said that she is a leading laboratory specialist with experience in the study of oxidative stress and the evaluation of the reliability of these tests. Her study of OS in IBD and chronic gastritis caused by *Helicobacter pylori* is unique for the country and proves its role in the pathogenesis of the chronic inflammatory process. A relationship was established between HP infection and antioxidant status, as well as with endoscopic changes in the gastric mucosa (A1, P8). The changes in iron metabolism, its interrelationship with anaemia in these chronic diseases and the production of free radicals G(7) were monitored. Also of valuable practical contribution is the assessment of the relationship between a diet poor in fruit and vegetables in divers and the number of micro-bubbles at decompression and the corresponding risk. The changes are relevant to this occupational group working in a specific work environment. D(3)



4. Contributions related to markers for the diagnosis and monitoring of cardiovascular diseases. Oxidative stress, obesity and reduced lung function were studied in smokers without respiratory diseases and those with COPD D(29,30), P11. The study of thiols as a criterion for the antioxidant barrier in patients with cardiovascular and kidney diseases has a significant scientific and applied contribution (D4). Attention was paid to the importance of trace elements (zinc, iron and magnesium) as an etiological factor in patients with ventricular fibrillation, and a relationship between their levels with the severity of CVD was sought. D(16, 17). The dynamics in the level of high-sensitivity C-reactive protein, as a cardiovascular risk marker in patients with ventricular fibrillation attacks, was monitored D(18), P30. A more recent paper sheds light on the study of high-sensitivity cardiac troponin I as an important prognostic biomarker during Covid 19 infection D(11).

5. Contributions to the study of various biological matrices.

Dr. Yordanova conducts a thorough comparative study of biochemical markers in various biological matrices in patients with GET diseases - saliva, serum, and faeces. Make a SWOT analysis of saliva's weak and strong points as a biological material and its application in medical practice A1, C3. Of significant practical importance is the determination of the cellular composition of the oral fluid, which is of interest mainly to the extraction of cells for genomic diagnosis and phenotyping in oncological diseases or identification of specific individuals in criminology A1, D(15). It presents in-depth studies of faecal calprotectin as a specific and sensitive marker for local intestinal inflammation and the determination of its diagnostic reliability, confirming the need for its application both in the diagnosis and monitoring of IBD. in chronic intestinal diseases A1, D(1), P3. I believe that Dr. Yordanova's dissertation and monograph are a valuable aid for students, dentists and doctors in this understudied topic of salivary laboratory diagnostics.

6. Research in the field of toxicology and immunology.

Much attention has been paid to the participation of saliva in the human immune defence, to the new inflammatory markers - calprotectin and adenosine deaminase (ADA), to oxidative stress and antioxidant defence. A1, C3. Research on mucosal immunity of the gastrointestinal tract is of particular interest. Of fundamental and applied importance is the study of secretory IgA in saliva in chronic GET diseases, smoking and in persons working under hyperbaric conditions A1, D(12, 8) P8. Elaboration on cold agglutination and false thrombocytopenia, which create a serious laboratory problem in routine haematological tests and in the clinical interpretation of the results, provides recommendations for mandatory procedures in such cases. D(6, 23) Monitoring of faecal calprotectin has been established as a reliable marker of the degree of inflammation in autoimmune intestinal diseases. The study of interleukin-6 levels in patients with Covid 19 and the sought relationship with the loss of smell as its characteristic symptom, as well as with the severity of the course of infection, contributes to the still insufficiently elucidated pathogenesis in the course of the disease. D(31)

The compliance of the scientific production of Dr. Yordanova with the quantitative and qualitative criteria for the awarding of scientific degrees and titles and the holding of academic positions at the Burgas University "Prof. Asen Zlatarov" and their comparison with the minimum



requirements of the National Centre for Information and Documentation (NACID) is presented in Table 1.

<b>A group of metrics</b>	<b>Content</b>	<b>Associate professor n. of points</b>	<b>Candidate Points</b>
<b>A</b>	Indicator 1	50	<b>50</b>
<b>C</b>	Indicator 3 or 4	100	<b>100</b>
<b>D</b>	Indicators (5÷9)	220	<b>514</b>
<b>E</b>	Indicator (10÷12)	60	<b>125</b>
<b>F</b>	Indicator (13 to end)	20	<b>220</b>
		450	<b>Total: 1009 т.</b>

### **Teaching and learning activity**

The teaching activity of Dr. Mariyana Yordanova began in 2002, initially as a part-time lecturer in Radiobiology at Medical College-Varna, and subsequently in 2011 in Clinical Laboratory as an assistant at the Department of "General Medicine and Clinical Laboratory" at the Medical University "Prof . Paraskev Stoyanov" - Varna. Her educational and teaching activity is related to training students in the specialties of medicine, pharmacy, nursing, midwife, and medical laboratory technician. She developed curricula and programs, a lecture course and exercises. In addition to her regular employment, Dr. Yordanova is the head of 2 continuing medical education (CME) courses for medical specialists and doctors from the Plan-timetable of the courses at the Academy of Military Medical Sciences. Her total classroom employment for the last academic year was 330 study hours. The experience and qualification of Dr. Yordanova in Radiobiology is the basis for her to be included as a lecturer in the period 2011-2015. in courses for renewal of permission to work in an environment of ionizing radiation at the Naval Academia - "Nikola Vaptsarov" - Varna.

From 2013-2018, she supervised two specialists who had already passed their exams in the specialty.

She actively participated as an academic tutor and mentor in the general education Project of the Ministry of Education and Culture, "Student practices".

### **Diagnostic and therapeutic activity:**

For many years, Dr. Mariyana Yordanova led the MMA-Varna laboratory, the third level of competence. Dr. Yordanova has built on her training and professional affirmation in her many years of practice. As proof of this is that her expert opinion on some poisonings is relied upon by the Regional Directorates of the Ministry of the Interior - Targovishte, Razgrad, Shumen.

### **Short-term specializations and qualifications:**

Dr. Yordanova specializes in various fields of medical science – rectoscopy, fibro-gastroscopy, radiobiology and radiation protection. She has conducted numerous specializations in the clinical laboratory, immunology and virology. She went through a qualification course to acquire a



pedagogical qualification and scientific teaching experience at the Academy of Arts - Sofia. The candidate completed a one-year specialization in health management at the University of Economics - Varna.

Dr. Yordanova is a member of the Bulgarian Medical Association, the Bulgarian Society of Clinical Laboratory, and the Bulgarian Association of Aviation, Marine and Space Medicine. In recognition of her professional merits, she received an award from the Bulgarian Medical Association for special merits in the field of health care in the Varna region (2012) and an award for high professionalism in the performance of her duties from the Chief of MMA-Sofia (2013). Winner of the "best poster" award at the XII National Conference on Clinical Laboratory 4 - 6 October 2019, Aheloy, Bulgaria. Dr. Yordanova is a member of the editorial board of "MedCrave/ Geriatrics Journal" and "Online Journal of Cardiology Research & Reports".

**Personal impressions:**

I know the candidate from her work as a Head of the Laboratory at MMA-Varna and as an assistant professor at MU "Prof. Paraskev Stoyanov - Varna. Dr. Yordanova stands out for her initiative, organization, collegiality, professionalism and dedication to teaching. She has gradually and thoroughly built up her professional and academic career over the years. Demanding of herself, she is a person who can be relied upon and possesses integrity and responsiveness to colleagues.

**Conclusion:**

Dr. Mariana Georgieva Yordanova-Vasileva has extensive experience as a laboratory specialist and laboratory manager, as well as impressive teaching experience.

The scientific production of Dr. Mariana Georgieva Yordanova-Vasileva is in accordance with the professional field and is in the scientific specialty of the announced competition.

The documents and materials submitted by Dr. Mariana Georgieva Yordanova-Vasileva meet the requirements of the Law for the Development of Academic Staff in the Republic of Bulgaria (LADAB), the Regulations for the Implementation of the LADAB and the "Regulations for the Conditions and Procedures for the Acquisition of Scientific Degrees and for the Occupation of Academic Positions at Prof. Dr. Asen Zlatarov University - Burgas". They meet, and in some of the indicators significantly exceed, the minimum quantitative requirements for holding the academic position of Associate Professor at the University " Prof. Dr. Asen Zlatarov".

I give a positive evaluation to Dr. Yordanova in my review. I propose to the Honourable scientific jury to vote positively for the candidature of Dr Mariana Georgieva Yordanova-Vasileva for the academic position of Associate Professor at Prof. Dr. Asen Zlatarov University-Burgas in the field of higher education 7. Health and Sport, professional field 7.1. Medicine, scientific speciality "Clinical Laboratory".

Date: 01.11.2022  
Sofia

Signature:  
/ Professor Margaritka Ivanova Boncheva, MD, PhD /