

To
the Chairman of the Scientific Jury,
appointed by Order № P-109-300/07.08.2020
of the Vice-Rector for Career Development
of Medical University - Varna
55, Marin Drinov Str.
9002 Varna

In response to Protocol №1/20.08.2020

Attached is presented: REVIEW
for a competition for the academic position of ASSOCIATE PROFESSOR
in the field of higher education 4. Natural sciences, mathematics, and informatics,
professional field 4.3. Biological sciences,
scientific speciality PARASITOLOGY AND HELMINTHOLOGY,
for the needs of the Department of Infectious Diseases, Parasitology and
Dermatovenereology,
of Medical University "Prof. Dr Paraskev Stoyanov" – Varna,
published in State Gazette No 53/12.06.2020.

Member of the Scientific Jury: Prof. Dr Rossitza Ivanova Kurdova-Mintcheva, PhD
Scientific speciality: PARASITOLOGY AND HELMINTHOLOGY
Institution: NATIONAL CENTER FOR INFECTIOUS AND PARASITIC DISEASES - Sofia

Address and contacts:

Postal address: Sofia 1504, 26 Yanko Sakazov Blvd.

Email address: rossi28i@yahoo.com; rossitzamintcheva@gmail.com

Telephone: +359 887 719911

I declare that I do not have shared scientific papers with Dr Kalina Stoyanova Pavlova, PhD.

I. Analysis of the candidate's career profile

Dr Kalina Stoyanova Pavlova was born in 1976. In 1995 she graduated from the High School of Natural Sciences and Mathematics in Varna with a degree in biology. In 2001 she graduated with full honours from the Medical University (MU) "Prof. Dr Paraskev Stoyanov", Varna with a master's degree in medicine. Since 2002 she successively maintains the position of assistant, senior and chief assistant (to this day) at the Department of Infectious Diseases, Parasitology and Dermatovenereology, MU-Varna, teaching in the fields of medical parasitology and tropical medicine. Dr K. Stoyanova attained a speciality in Medical Parasitology in 2006. After that, she heads the parasitological laboratory at SMDL "Exactlabor 2002" and at SMDL "Status" EOOD (2009 – till now). Since 2016 she has been a doctoral student in independent training at NCIPD-Sofia, and in 2017 she was awarded the educational and scientific degree "Doctor" in Parasitology and Helminthology after defending a PhD thesis on the topic: *"Epidemiological studies and analysis of risk factors for the distribution of the intestinal parasitoses with person-to-person transmission in Varna district "*.

Her participation in many courses for continuing education in medical parasitology and tropical medicine at NCIPD-Sofia, MU – Plovdiv, Varna, and Sofia, as well as in Germany contributed to the development of Dr K. Stoyanova as a qualified specialist and lecturer. The candidate declares that she speaks excellent English and good Russian. She has considerable computer skills using various software programs.

Dr K. Stoyanova is a member of the Bulgarian Medical Association, the control commission of the Bulgarian Association of Medical Parasitologists (BAMP), the Bulgarian Parasitological Society (BPD) and the Expert Council on Medical Parasitology at the Ministry of Health.

II. General description of the submitted materials in the competition

Dr Kalina Stoyanova Pavlova, PhD is the only candidate in the announced competition. The Faculty of Meeting of the Faculty of Medicine of MU-Varna approved the proposal for the competition with Protocol № 26 of 13.07.2020.

The submitted set of documents is in accordance with the requirements of Article 2b, (2) and (3), including the minimum national requirements under Article 2b, (2) and (3), respectively to the requirements under Article 26 (5) of the Law for development of the academic staff in the Republic of Bulgaria (LDASRB) and Article 53 of the Regulations for its application for

admission to evaluation. They are developed following the requirements of LDASRB, the Regulations for its application and the Regulations for the development of the academic staff at the Medical University "Prof. Dr P. Stoyanov" - Varna.

The candidate has presented a total of 38 titles, independently and in co-authorship with other researchers, published in scientific journals, monographs and collections in full text, in three lists:

a) scientific papers used as evidence to meet the minimum scientometric requirements for acquiring the academic position of "Associate professor" – 14 issues:

- author's abstract of a dissertation on *"Epidemiological studies and analysis of risk factors for the distribution of the intestinal parasitoses with person-to-person transmission in Varna district"* for obtaining the scientific degree "Doctor" – 1 issue;
- monograph (main habilitation work), which I accept as a habilitation thesis under Article 24, (1), (3) or Article 29, (1), (3) of LDASRB – K. Stoyanova. *"Cryptosporidiosis - current aspects of taxonomy, clinical presentation, diagnosis and treatment"*, Varna Medical University Press, Varna, 2020, 187 pages, ISBN 978-619-221-234-6;
- monographs that are not presented as a main habilitation work:
- K. Stoyanova. *"Cryptosporidiosis - epidemiology of a hidden parasitosis"*, Varna Medical University Press, Varna, 2020, 194 pages, ISBN 978-619-221-243-8;
- K. Stoyanova. *"Enterobiasis and giardiasis – current problems"*, Varna Medical University Press, Varna, 2019, 174 pages, ISBN 978-619-221-215-5;
- scientific publications in journals, referenced and indexed in world-renowned databases (Web of Science and Scopus) – 8 titles. Two of the articles are in journals with impact factor - Environmental research IF = 2.556 for 2006 and Helminthologia IF = 0.731 for 2018, or total IF = 3.287
- published chapters from books or collective monographs - 2 titles.

b) full-text publications in Bulgarian and international scientific journals with ISSN, outside the minimum requirements – 24 titles. I do not accept three works for review: №№3, 4, and 18, because they do not correspond to the topic of the competition.

c) participation in international scientific forums (14) and national congresses and scientific forums – 18, a total of 32. Not subject to review.

In the presented scientific production, Dr K. Stoyanova is the sole author of three monographs, two chapters of monographs and one scientific article. In 16 publications she is the first author, in seven she is second, and in the other eight – subsequent co-author, which shows her capacity as an independent and leading researcher, as well as her valuable quality for collaboration.

III. Evaluation of the candidate's scientific works for the overall academic development

General characteristics of the scientific production and publishing activity

Dr K. Stoyanova's research is in the field of aetiology, epidemiology, clinical presentation, diagnosis, treatment, epidemiological surveillance and control of local and imported parasitoses with a focus on the socially significant intestinal parasitic diseases in humans in our country, which corresponds to the theme of the competition.

The main contributions and achievements as a result of independent or collaborative research with other researchers can be summarised as follows:

1. Most of the candidate's research, including her doctoral thesis and independent monographs, are focused on the current characteristics of the aetiology, epidemiology, clinical presentation, diagnosis, treatment, epidemiological surveillance and control of intestinal parasitic diseases (enterobiosis, hymenolepiasis, blastocystosis, cryptosporidiosis) some of which are classified as opportunistic infections.
- Through a comprehensive 12 years study (2007-2019) on the territory of North-eastern Bulgaria and Varna region, original epidemiological data were obtained and extensive indicators were assessed (including the overall prevalence of *B. hominis* – 3.26%, *E. vermicularis* – 1.75%, *G. duodenalis* – 0.58%). A broad analysis was performed on the influence of several epidemiological parameters (age, gender, place of residence, seasonality, occupation, and others) on the risk of invasion, including the prognostic trends in the incidence of these parasitoses (A.1, Γ.5.2, 12, 16).
- An emphasis is placed on the assessment of the importance of outpatient

parasitological testing (performed on prophylactic, epidemic and clinical indications) for detecting the prevalence of intestinal parasitoses by age groups in the more vulnerable group of children and among the rarely studied groups of adolescents and adults (A.1, Г.7.1, 12, 16, 19). With public-health contribution is the outlined necessity to regulate periodic preventive examinations not only in kindergartens but also of school-age children evidence based on the established high infestation.

- Of particular practical importance for epidemiological surveillance are the results on the prevalence of intestinal parasitosis – clinically pronounced and asymptomatic, among the staff of socially important professions (food sector, health and social facilities), as well as the assessment of the occupational risk of infection (A.1, 1), which have not been thoroughly studied to date.
- Contribution to the clarification of the aetiology of diarrheal conditions is the established high relative share of persons with intestinal parasites among the patients with the diarrheal syndrome. This substantiates the proposal to regulate the inclusion of parasitological testing for intestinal parasites in differential diagnostic plans and Health insurance clinical pathways in hospitalized patients with diarrhoea (A.1, Г.7.5).
- A significant contribution is the analysis of various aspects of the effectiveness of the etiological therapy of intestinal parasitoses, which contributes to the development of a rational and individualized approach in each case (Г.7.6, 14) and is a valuable tool for the clinical practice.
- The pioneering studies of Dr K. Stoyanova on a newer opportunistic intestinal protozoois - cryptosporidiosis, in our country deserve special attention. Worldwide described epidemics prove that the waterway transmission is a leading route for this parasitosis, similar to another intestinal protozoois - giardiasis. With an innovative approach and modern research methods (immunofluorescence, DIC and PCR) the candidate in co-authorship with an international team proves for the first time in Bulgaria the presence of *Cryptosporidium* spp. and *Giardia duodenalis* in various water sources – rivers, wells, drinking, sewage and other types of water (Г.7.8, Г.5.1, 20, 21). These findings are an indicator of taking necessary preventive measures – regulation of sanitary and parasitological studies of water sources for protozoa of medical importance to ensure the safety of the population, as well as the inclusion of

these agents in the monitoring plan to identify the causes of water epidemics.

- The interest in this topic and the candidate's research is confirmed by the numerous citations (99) of the leading publication (Г.7.8) in referenced and indexed international scientific journals.
- The research interest of Dr K. Stoyanova in *Cryptosporidium* spp. is not limited to environmental studies. It logically focuses on studies of cryptosporidiosis in humans. She introduces in the routine diagnostic and scientific explorations the modern methods for identifying *Cryptosporidium* spp. and for the first time establishes cases of this disease in North-eastern Bulgaria. The data from the epidemiological analysis shed light on the prevalence of clinically manifested and asymptomatic forms in different age groups with an emphasis on the high extent (3.06%) among children from 0 to 5 years suffering from diarrhoea (A.1, B.3, Г.5.1, Г.7.2).
- Part of the candidate's scientific work (Г.8.1, 6, 11, 13), as well as a monograph (Г.7.1), is devoted to analytical reviews displaying the current information on the most common intestinal parasitoses (enterobiosis, giardiasis, and blastocystosis), supplemented by data from her own studies. These publications raise awareness among GPs, different specialists, and other healthcare professionals.

2. Studies of some zoonoses in humans

- The results of the first seroepidemiological studies of toxocariasis in North-eastern Bulgaria through the modern serological methods (ELISA and Western blotting) applied by the candidate and her co-authors have an essential contribution. The results revealed surprisingly high seropositivity (15.0%), which is an indicator of significant latent infectivity with *Toxocara* spp. among the population in the region (5). The described cases of ocular toxocariasis and toxocariasis after geophagy confirm the thesis that the clinically manifested forms of this parasitosis are not exotic in North-eastern Bulgaria (2, 10).
- Looking for an epidemiological connection with the discovered high seroprevalence, Dr K. Stoyanova conducted the first sanitary-parasitological study of the environment from public places in Varna and established contamination with eggs of *Toxocara* spp. and other parasites in dogs. These results conclusively raise the question of devising control measures to protect the environment and

human health (F.7.4).

- Of interest are also the clinical and epidemiological data described and analyzed throughout the assessment of several outbreaks of trichinosis in Varna region over the years (22, 23).

3. Studies of some imported parasites

Several of the works of Dr K. Stoyanova treat the problems of socially relevant imported parasitosis. The detailed clinical-diagnostic analyses of cases with malaria and schistosomiasis provide valuable clinical and epidemiological information, emphasizing on the relevance of this challenge in shipping and maritime tourism, which is of particular importance for the Varna region (9, 15, 24).

4. I am particularly pleased to note the application of innovative for Bulgarian parasitology statistical, mathematical and prognostic models in the epidemiological studies of the candidate, which are a guarantee for the reliability of the results and allow the formulation of reliable trends in the dynamics of parasitic diseases. Subsequent epidemiological analyses over the years confirmed the validity of the so made forecasts.

Overall, the candidate's research publications are executed accurately, written, and designed intelligently, and are richly illustrated. All said so far shows that Dr K. Stoyanova is a purposeful and consistent researcher with excellent knowledge on the issues of medical parasitology.

According to the presented academic report, the overall impact factor of Dr K. Stoyanova is 3.287.

Scientific activity - distribution and application of the scientific and practical achievements of the candidate among the scientific community

Dr K. Stoyanova actively presents to the scientific community her research and the consequent results. She has participated in 32 scientific forums, of which 14 international and 18 national and national with international participation.

The candidate is well presented in global scientific networks - ORCID, Web of Science Researcher, Scopus, Research gate, Google Scholar and Academia.

Participation and management of scientific projects

The candidate is a member of a research team of an international scientific project and is a manager of a project supported by the Fund "Science" of MU-Varna. She also participated in one educational project.

IV. Evaluation of the monographic work or equivalent publications submitted for participation in the competition for "Associate Professor" by the candidate

The productivity of Dr K. Stoyanova, conveyed by writing three monographs, provokes admiration. In the documents of the competition, one of them "*Cryptosporidiosis - current aspects of taxonomy, clinical presentation, diagnosis and treatment*", Varna Medical University Press, Varna, 2020, 186 pp. ISBN 978-619-221-234-6 with a single author Dr K. Stoyanova is presented as a monographic thesis (main habilitation work). The monograph is extremely impressive with excellent structuring and design of the information, a wide range of included topics, informativeness, rich illustration and flawless literary language. It is dedicated to one of the newly discovered parasitosis, which became especially relevant in the late 80s of the last century after the emergence of HIV/AIDS. However, the spectrum of affected contingents of the population is broader and includes other immunocompromised patients as well as immunocompetent individuals. In our country, the studies on cryptosporidiosis are still few, and diagnostic tests are limited, which clearly shows the need to increase the awareness of medical and other specialists. Based on an analysis of numerous literature sources (481 publications), the author presents contemporary scientific ideas about cryptosporidiosis in humans, refracted through her views, experiences and results of her personal research. The main chapters are devoted to historical data, the causative agent, ultrastructural organization, pathogenesis, immunity, clinical picture, diagnosis, and treatment of the disease. They provide new, in-depth, and useful information and show the excellent professional competence of the author. Dr K. Stoyanova also includes data from her own research. The results of a ten-year epidemiological study of intestinal parasitosis in North-eastern Bulgaria revealed the first cases of cryptosporidiosis in the region (in 2017). The stated above gives grounds for the candidate to continue with targeted research on cryptosporidiosis among various contingents with epidemiological and clinical risk, and the summarised data show 12 positive findings from 744 subjects. The detailed characteristics of the clinical manifestation and the treatment of the diagnosed patients enrich the knowledge in these areas. Author's photomicrographic images, included in the appendix, are of great help to the laboratory practice. The monograph is peer-

reviewed, has an international publishing number (ISBN), meets all other requirements for a main habilitation work, and thematically fully corresponds to the scientific speciality of the announced competition.

V. Reflection (citations) of the candidate's publications in the national and foreign literature (publication image)

The scientific publications of Dr K. Stoyanova are well reflected in the national and foreign literature. The official reference for citations includes 25 citations of foreign authors in scientific journals indexed in world-renowned (Web of Science and Scopus) databases (list attached), covering the minimum scientometric requirements for the academic position of "Associate Professor". Also, 34 citations in scientific journals, referenced and indexed in world-renowned databases with scientific information, are presented, outside the minimum criteria for the academic position. In other international editions, the citations are 44, and six more are in Bulgarian publications.

VI. Complex, qualitative assessment of the educational activity, incl. scientific guidance of students, doctoral students, postgraduates

As a long-term assistant and chief assistant, Dr K. Stoyanova conducts very intensive teaching and education activities in medical parasitology with students and interns in the Department of Infectious Diseases, Parasitology and Dermatovenereology of MU-Varna. This is documented with an official reference for the academic years 2016-2020 of the Director of the Academic Affairs of the MU. The candidate conducts training in medical parasitology for students in the speciality "medicine" 5th year (in Bulgarian and English programs); in tropical medicine as an elective module; in Medical Parasitology for "Nurse" and "Midwife" specialities from MU-Varna and the affiliates in Sliven, Shumen and Veliko Tarnovo, as well as students majoring in "Medical Laboratory Assistant" and "Public health Inspector" in Medical College-Varna. She participates in courses for postgraduate education.

The candidate annual workload during the cited period varies from 220 to 402 hours, on average – 313.4 hours per year, of which 119.6 (38.2%) hours of lectures and 193.8 hours of seminars. The teaching in the English language is significant, which in the 2019/2020 school year extends to 260 hours (61.9% of the total workload).

Dr K. Stoyanova develops the required educational materials for the described above forms of education, including the e-learning courses in the system Blackboard Learn+.

VII. Critical remarks and recommendations

I have no significant remarks on scientific production and the presented documentation. The competition documents are complete, following the requirements and I must emphasize that they are very precisely organized and presented in electronic form, and the monographs - on paper.

VIII. A general assessment of the candidate's compliance with the requirements of the Law for the Development of the Academic Staff in the Republic of Bulgaria and the Regulations for its implementation

Dr Kalina Stoyanova Pavlova meets the mandatory conditions, quantitative criteria, scientometric indicators and the minimum national requirements for acquiring the academic position of "Associate Professor", according to the Regulations for application of LDASRB for different scientific degrees and academic positions in the field of higher education 4. Natural sciences, mathematics, informatics, professional field 4.3. Biological Sciences, scientific speciality "Parasitology and Helminthology" and the Regulations for the development of the academic staff at the Medical University "Prof. Dr P. Stoyanov" – Varna.

The total amount of points of the candidate according to the standardized indicators amounts to 405 points with the required 400 points (by indicators: A – 50 points, B – 100 points, Г – 205 points and Д – 50 points).

IX. Conclusion

The overall research and teaching activity of Dr K. Stoyanova reviewed above shows that she is an established specialist in the field of Medical Parasitology, an erudite researcher and an experienced and respected teacher.

Dr Kalina Stoyanova Pavlova, PhD meets the mandatory and specific requirements and scientometric criteria for the academic position "Associate Professor" according to LDASRB, the Regulations for application of LDASRB and the Regulations for the development of the academic staff at the Medical University "Prof. Dr P. Stoyanov" – Varna.

All this gives me a reason to express my **positive assessment** and convincingly to recommend to the members of the Scientific Jury to give their confirmatory vote and propose to the Faculty Council of MU-Varna Chief Assistant Dr Kalina Stoyanova Pavlova, PhD, to be elected to the academic position "Associate Professor" in the scientific speciality

"Parasitology and Helminthology" for the needs of MU-Varna, Department of Infectious Diseases, Parasitology and Dermatovenereology.

07.10.2019

REVIEWER:



Prof. Dr Rossitza Kurdova-Mintcheva, PhD

