STATEMENT

By Prof Dr Krasimir Rozenov Genov, MD, PhD

Head of Department "Neurology", Second MBAL, Sofia

Regarding a Competition for academic position "Associate Professor in higher education section 7-"Healthcare and sport", in professional field 7.1. Medicine and scientific specialty "Neurology"(03.01.19). In accordance with Art. 60, paragraph 2, of the Regulations for the development of the academic staff at UMPHAT "N. I. Pirogov"- Sofia, according to the decision of the Academic Jury with protocol No HC-02-21/28.04.2021

Scientific Jury has been chosen by the order № RD-26 - 1166/05.05.2021 of the Executive Director of UMPHAT "N. I. Pirogov"

Professional development, qualifications: There is only candidate participating in the competition- doctor Maria Ivanova Dimitrova - head of department of "Neurology" at UMPHAT "N.I. Pirogov"-Sofia. She was born in 1983. In 2007 she receives a master's degree in Human Medicine at Medical University of Sofia. From 2008 to 2013 she passes her residency in Neurology at Military Medical Academy – Sofia, at the Department of Neurology and Neurosurgery. She acquires a specialty in "Neurology" in 2013. In December 2008, after a competition, she becomes an assistant and a doctoral student at the Department of Neurology, Military Medical Academy, Sofia. In April 2018, after successfully defending a dissertation "Neuropsychological disorders in obstructive sleep apnea" she obtains a degree of Doctor of Medicine. In 2018 she obtains a master's degree in health management at MU, Sofia - Faculty of Public Health. From March 2016 to June 2018 she works as a military doctor in Military Medical Academy, Sofia. She works at Military Medical Academy, Sofia from December 2008 to June 2018. She obtains a certificate in Neurosonology from 2014 at Medical Academy, Sofia.

Dr Maria Dimitrov, MD has conducted educational courses: EFNS – Academy Spring School Stare Splavy - 2012, Cognitive disorders in neurological diseases 2014, Preceptorship on MRI in multiple sclerosis 2015, Teaching Courses during 22nd Meeting of European Neurological Society 2012, Joint Congress of European Neurology 2014, 1st European Academy of Neurology 2015. Regional Teaching Course of the European Academy of Neurology 2017. World Federation of Neurology continuing medical education program 2017. 5th Fabry Summer School 2018. Angels Stroke Academy 2019. She takes part in many Bulgarian and international forums. She is a member of the Bulgarian Neurological Society, Bulgarian Medical Association, Bulgarian Association of Neurosonology and Cerebral Hemodynamics.

Personal qualifications: She speaks Russian and English at a good level. Computery literacy - Microsoft Office, Word, Power point, Excell, Open Office, Internet, Gamma Code Master.

Research activity. In this competition the candidate participates with 35 scientific papers - 1 dissertation and a total of 24 papers, after the dissertation for the acquisition of academic degree of "Doctor", one monograph, which is presented as a habilitation paper showing results from the author's own research, 6 articles in journals with IF (official notes for two of each have been submitted), 21 abstracts from reports in international congresses, 13 of each have been published in journals with IF (mainly in the European Journal of Neurology), 29 abstracts in Bulgarian journals, 21 abstracts from reports presented at Bulgarian conferences and congresses with international participation. 18 publications in publications with IF.

In 34 of the presented scientific works Dr. Dimitrova, MD is the primary author.

General assessment of the candidate in compliance with the mandatory conditions and the quantitative criteria and scientometric indicators in accordance with the Regulations for application of the Law on the Administration of Associated Sciences and the Regulation for borrowing of academic degree of "Associate Professor" at the University Hospital "N. I. Pirogov ", Sofia: The analysis of the materials presented by Dr. Dimitrova, MD for fulfillment of the minimum national scientometric criteria set in ZRASRB for AD" Associate Professor "shows that the presented information is sufficient and the minimum national requirements are met (See table).

Group of indexes	Content	Associate-professor Minimal points according to the national requirements	Associate-professor Available points
A	Index 1	50	50
B	Index 2	-	-
C	Indexes 3 and 4	100	100
D	Sum of indexes from 5 to 9	200	915.25
E	Sum of indexes from 10 to 12	50	95
F	Sum of indexes from 13 to the last index		70

G	IF (only for the requirements of UMHATEM “N. I. Pirogov”)	-	-

The scientific works by Dr Dimitrova, MD have been cited positively 18 times in Bulgaria.

Dr Dimirova, MD has experience in clinical research – multiple sclerosis, neuropathic pain. She is a sub-researcher in 9 clinical studies – mainly multiple sclerosis, in the capacity of EDSS rater.

Teaching activity: According to the report, Dr Maria Dimitrova, DM’s study load in the academic year 2018-2021 in 210 hours, which meets the requirements of the Rules of development of the academic staff of UMHAT "N.I. Pirogov" - Sofia. Dr. Dimitrova, MD has presented lectures for residents in Neurology on "Emergencies in Neurology", and leads exercises with intern doctors (sixth year students). The teaching and methodological activities also include the development of lectures, editing of materials for the Journal of Emergency Medicine, principal investigator in clinical trials and conducting colleges.

The scientific publications of Dr. Dimitrova, MD are mainly in Obstructive Sleep Apnea (OSA), Multiple Sclerosis (MS), Cerebrovascular diseases (CD); Spinal pathology (SP), Neuro-psychological research in neurologic diseases, COVID-19, and others.

The monograph “*Diagnostic and therapeutic approaches for Cryptogenic Brain Infarction”,* published in 2021 is a solo publication made up of 9 chapters. It is dedicated to the definition, epidemiology, differential diagnosis and therapeutic recommendation for cases of stroke of unknown origin. She describes personal cases of patiens with rare causes of ischemic brain infarction. The monograph is shown to be a valuable aid to specialist of Neurology, Rheumatology, Cardiology, Genetics, as well as for students. **The monograph has theoretic and scientifically applied contribution to Bulgarian neurology.** It is made up by 9 chapters. The monograph has detailed material on rare causes of ischemic stroke, which can remain undiagnosed for a long time. The detection of risk factors for stroke helps to conduit timely prophylaxis and prevents a new cerebrovascular accident from occurring. **This makes it a valuable tool in the work and determines its scientific and practical nature.**

The topic of *cerebrovascular diseases* is widely covered in the scientific works of the author. In addition to the monograph, there is a series of reviews, articles and scientific reports ((II, III 7, 20, 22, 25, 28, 34; IV 4.1.6, 4.1.7, 4.1.8, 4.1.9, 4.1.10, 4.1.11, 4.1.12, 4.1.14, 4.1.20, 4.1.21; IV4.2.3, 4.2.6, 4.2.12, 4.2.14) In scientific participation (IV 4.2.12) own data are presented for

atrial fibrillation screening in patients with unclear cause of stroke. The telemonitoring system was used in 185 patients with an average patient monitoring period of 96 hours. The conclusion is that long-term monitoring of patients exceeds the 24-hour Holter ECG in the diagnosis of Atrial fibrillation, which has a theoretical and practical application. One part of the review articles offer a detailed analysis of various risk factors for SMEs: dyslipoproteinemias, congenital and acquired heart defects, alcohol abuse, smoking, obesity (III 11). The modern concepts for primary and secondary prevention of strokes were also analyzed (III 7,25,34). Special attention is paid to modern concepts of the indications and the results of surgical intervention, the use of endovascular methods in combination with drugs (IV 4.1.7, 4.1.8, 4.1.11), which is of basic scientific and practical nature.

A series of articles and scientific papers consider the possibilities for differentiated treatment of strokes (III 34, IV 4.1.7, 4.1.8). One of the papers is related to the organization of the treatment of ischemic stroke (IV4.1.12). Another scientific publication reports her own results from revascularization treatment, which has obtained a prize from the scientific forum it was presented in(IV4.1.8). Among the publications is a report presenting a case of a patient with bilateral carotid artery dissection treated endovascularly (IV4.2.3). An original article (III 22) presents her own data from a study of early symptoms of anxiety and depression in 117 patients. A review article (III 20) examines the immunological aspects of ischemic strokes. Of interest is also a review article devoted to the study and evaluation of swallowing in patients with acute ischemic stroke (III 28). Several publications are devoted to the diagnosis and treatment of cerebral venous thrombosis, present in a scientific report own cases of venous thrombosis (IV 4.1.14). Of interest are the descriptions of clinical cases of parenchymal cerebral haemorrhage: one found in a patient with spontaneous haemorrhage due to Rivaroxaban-associated thrombocytopenia, with this case being one of the few in the world literature, and another in a patient with hemorrhage with LVAD (IV 4.1.10, 4.2.14). A case of a young patient with a spontaneous subdural hematoma after physical exercise has been described and is of interest to the clinical practice (4.1.5).

The most common part around which Dr Dimitrova's scientific interests are concentrated is the obstructive sleep apnea. This section includes a total of 11 works on the author's list and one successfully defended dissertation. 1. *Neuropsychological disorders*: A significant part of the scientific research on the topic of obstructive sleep apnea is related to changes in cognitive functions. In a series of reviews, original articles and scientific contributions (III 5, 6, 10, 14, 21; IV 4.1.4, 4.2.4, 4.2.5, 4.2.7, 4.2.9, 4.2.10, 4.2.11) describes the appearance of cognitive impairment. Special attention is paid to the already existing scales and batteries to assess these disorders, especially the use of short tests which are of great importance for the detection of changes. These developments have **scientific and practical significance.**

The dissertation (I) confirms the presence of neuropsychological disorders in patients with GMS in the Bulgarian patient population, preparing a detailed neuropsychological profile. The study

was performed with 103 patients and 31 healthy controls. A short battery has been proposed for rapid assessment of the neuropsychological profile in patients with GMS. 2. *Preparation of a short neuropsychological battery for deficit assessment*: Of great scientific and practical importance are the data from the dissertation and from the publications evaluating the role of different methodologies and concerning the selection of appropriate short tests for assessment (IV 4.1.4, 4.2.11). . Based on the data from all studies, a short battery of tests was created: MMSE, TMT A, TMT B, Isaac's test, one-letter phonemic fluency test, which is also of **scientific and practical value.** 3. *Neuropsychological profile* of patients with GMS: The most severe deficit observed in patients with GMS is in terms of psychomotor speed and executive functions, especially in terms of switching to rapidly changing tasks and between different stimuli, choosing a strategy, dealing with complex tasks (I, IV 4.1.18, 4.2.10). These contributions are of a **scientific and theoretical nature.** 4. *Anthropometric profile of patients with GMS:* A number of publications have confirmed that some anthropometric indicators are particularly valuable as predictors of GMS and its severity (I, IV 4.2.7). The data are important for the prevention of risk factors and have a **scientific and practical contribution**. 5. *Anatomical substrate of the disorders*: Different visual rating scales were used for evaluation. Studies have shown that disturbances in attention and psychomotor speed are associated with hippocampal atrophy. These data are of **scientific and theoretical contribution**. 6. *Risk factors for neuropsychological disorders in obstructive sleep apnea*: The assessment of risk factors and their subsequent control and treatment has **scientific and practical contribution**.

Another area of scientific interest is devoted to neuropsychological changes and therapeutic possibilities in *multiple sclerosis*. 1. *Neuropsychology and behavioral changes*: All cognitive impairments significantly impair the quality of life of the patients. The scales for assessment and grading that are wildly used in the clinical practice are shown in detail (III 9, 31; IV 4.2.1). 2. *Modern therapeutic possibilities:* A series of review articles outlines the current pathogenetically justified therapeutic strategies in MS and identifies some new therapeutic possibilities (III 18, 24, 35). Of **scientific and practical importance** is an article devoted to the treatment of an attack of optomyelitis (III 23).

Another area of work of Dr. Dimitrova, MD is *spinal pathology*. A significant part of the scientific works is devoted to the diagnosis and treatment of spondylodiscitis (III 2, III 3, III 32, IV 4.1.2; 4.1.3; 4.2.2), an important and socially significant disease. In this regard, the scientific works are of **scientific-theoretical nature**. Of interest are several scientific reports of clinical cases with peripheral neurological symptoms (IV 4.2.13, III 29).

An interesting part of the scientific work of Dr. Dimitrova, MD *are Neuropsychological research in neurological diseases.* A series of reports examine the neuropsychological disorders in brain tumors and arteriovenous malformations (IV 4.1.13; 4.1.9) with **theoretical and practical application.** Several other publications assesse the anxiety and depressive symptoms

by assessing the hospital stress on admission to a hospital, in patients with any neurological disease (IV 4.1.15; 4.1.19; 4.2.8).

In the pandemic situation, any information related to the neurological complications of COVID 19 is observed with great interest. Own observations are shared in scientific reports and articles (III 30, III33, III26, IV 4.2.19, 4.2.20).

In the section "*Others*", are presented three reviews on Alzheimer's disease (III 12, 19) and an article on the treatment of memantine hydrochloride (III 16). Two articles are devoted to traumatic brain injury and post-traumatic headache (III 1,4), two articles on the pathogenesis of diabetic polyneuropathy and its treatment with alpha lipoic acid as a standard in treatment (III 15,17), treatment of neuropathic pain in a review (III 13). Three scientific papers present interesting cases from the clinical practice of a patient with probable Creutzfeldt-Jacob Heidenhain variant (IV 4.2.15). The second case is of an immunocompromised patient with systemic rheumatic disease with established cryptococcal meningitis (IV 4.2.17) and the third case is of a patient with clinical and electromyographic findings for acute demyelinating polyradiculoneuropathy type Guillain-Barré and concomitant established neuroboreliosis.(IV 4.2.16)

Conclusion. Based on the significance of the materials submitted by the candidate for the competition, their scientific-applied and scientific-practical contributions, combined with her teaching activity, I believe that Dr. Dimitrova, MD fully meets the requirements and criteria of the Law on the Terms and Conditions. for acquiring scientific degrees and holding academic positions at "N.I Pirogov" University Hospital, Sofia, as well as the minimum national requirements.

All this gives me reason to convincingly recommend to the esteemed members of the Scientific Jury to support the candidacy of Dr. Maria Ivanova Dimitrova, MD, for the award of the academic position "Associate Professor", for the needs of UMHAT "N.I Pirogov" , Sofia.

June 8, 2021 Prof. Dr. Krassimir Rozenov Genov, MD, PhD

Sofia Head of Nervous Diseases Clinic, Second Hospital, Sofia