

МЕДИЦИНСКИ УНИВЕРСИТЕТ

ПЛОВДИВ

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МЕДИЦИНСКИ УНИВЕРСИТЕТ-СОФИЯ

КАТЕДРА ПО ПЕДИАТРИЯ

ИЗХ. № 97/08.09.2023

To the Chairman of the Scientific Jury,

Designated by order of

the Rector of Medical University-Plovdiv,

**From Prof. Ivan Olegovitz Litvinenko, MD**, Department of Pediatrics at Medical University-Sofia, Chief of the Pediatric Neurology Clinic at the Specialized Hospital for Active Treatment of Pediatric Diseases "Prof. Ivan Mitev"-Sofia

**On Your Protocol No.1/ 24.07.2023**

attached, I present:

## OPINION

I have been appointed as a member of the scientific jury by order No.P-2015/13.07.2023, in accordance with article 4, paragraph 2 and article 25 of the Law on the Development of the Academic Staff in the Republic of Bulgaria, and article 57, paragraph 3 of the Regulations on the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria, in connection with the procedure for holding the academic position of "Associate Professor" in the scientific specialty "Pediatrics", field of higher education 7. Health Care and Sports, professional field 7.1. Medicine, at the Department of "Pediatrics and Medical Genetics" for teaching in Bulgarian and English - two positions on a part-time basis, as announced in State Gazette No.32/08.04.2023.

**The candidate in the competition is Dr. Margarita Panova, MD.**

The review of the materials is based on the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, its implementation regulations, as well as the Regulations on the Conditions and Procedure for Acquiring Scientific Degrees and Holding Academic Positions and the Quality Criteria for the Development of the Academic Staff at Medical University-Plovdiv. The documents have been presented according to the requirements of the regulations, well-organized, in excellent aesthetic form, and supported by the necessary evidential data.

### **Brief biographical data and professional development**

Dr. Margarita Panova graduated with a Master's degree in Medicine in 1986. She began her medical practice as a resident doctor at the Children's Clinic - Pazardzhik. From 1992 to 2000, she worked as a doctor in the Intensive Care and Active Treatment Sector at the Children's Clinic, Higher Medical Institute - Plovdiv. From 2000 up to now, she has been a doctor at the Pediatric and Genetic Diseases Clinic - Neurology Department. From 2012 to 2017, she was an assistant and from 2017 up to now, she has been a chief assistant at the Department of Pediatrics and Medical Genetics at Medical University-Plovdiv. In 1993 she obtained a specialization in

Pediatrics and in 2013 - another in Pediatric Neurology. In 2017 she defended her doctoral degree with a dissertation on the topic: "Health Status of Children with Shunted Hydrocephalus."

Dr. M. Panova has made maximum efforts to improve her qualifications by participating in: 2017 – 3<sup>rd</sup> East-European Epilepsy Course, Bulgarian Society Against Epilepsy. Borovets, Bulgaria; 2014 - Ultrasound Examination of the Central Nervous System - Qualification for Work with an Echograph; 2012 - Course Electroencephalography and Epilepsy Diagnosis, Sofia, Scientific Society for Child Developmental Neurology, Psychiatry, and Psychology; 2010 – Training Course Epilepsy, Romania. European Pediatric Neurology Society; 2010 - Training Course Central Motor Function Disorders, Romania. European Pediatric Neurology Society; 2006 – Eastern European Summer School of European Society for Pediatric Gastroenterology.

Dr. Margarita Panova is proficient in written and spoken German, English, Greek, and Russian.

**Membership in organizations:** Bulgarian Pediatric Association; Scientific Society of Pediatric Neurology, Psychiatry, and Developmental Psychology; Society for Neuromuscular Disorders; European Pediatric Neurology Society (EPNS).

#### **Scientific-Research Activity**

In the current competition Dr. Margarita Panova presents scientific developments as follows: 1 monograph, total number of publications - 43 (she is the first author in 14 of them, the second author in one, and the third and subsequent author in 26 works, participation in a textbook.

1. Monograph "Acute Hemiparesis in Childhood";
2. Original articles 5 with impact factor - the cumulative impact factor is 16,427;
3. Original articles in scientific periodicals referenced and indexed in world-famous databases are 24;
4. Original articles in non-referenced publications with scientific review - 19;
5. Participation in educational materials 3 publications - one independent and two co-authored in "Guidelines for Behavior in Certain Emergency Conditions in Pediatrics" edited by Ivan St. Ivanov and Tonyo Il. Shmilev 2021;
6. Presentation of reports at scientific events in Bulgaria or abroad. Dr. Panova has participated with scientific communications in 5 international congresses or conferences, with four of the communications being published with abstracts in journals with impact factor, 2 of which have been cited.

#### **Dr. Panova's scientific interests can be grouped as follows:**

- I. Cerebrovascular Diseases: 1. Congenital cerebral vascular malformations; 2. Cerebral strokes in children.
- II. Disorders in early childhood development: 1. Neuro-psychological developmental retardation; 2. Cerebral palsy; 3. Autism spectrum disorders.
- III. Epilepsy, epileptic syndromes, and epileptic encephalopathies in childhood.
- IV. Genetic and rare neurodegenerative diseases.
- V. Congenital metabolic disorders.
- VI. Inflammatory and infectious diseases in childhood.
- VII. Hydrocephalus.
- VIII. Gastroenterology.

### **Citations**

Dr. Margarita Panova's publication activity amounts to 70 citations in the Scopus and Web of Science databases according to the provided reference, and 15 citations in non-referenced scientific publications.

Dr. Panova has Scopus h-index - 5.

### **Participation in scientific projects**

Dr. Panova has participated in a total of 3 intra-university projects: 1. Project MF PM D-04/2022 on the theme: "Information Portal on the Most Common Surgical Conditions in Childhood"; 2. Project MF NO-13/2022 - theme: "Development of a Screening Guide for Risk of Malnutrition in Children"; 3. Project MF NO-21/2023 - theme: "Measurement of Anti-Xa Factor in Children Undergoing Treatment and Prevention with Low Molecular Weight Heparin".

Dr. Margarita Panova is the supervisor of three pediatric trainees.

### **Teaching load:**

According to the official report, Dr. Margarita Pavlova has a total teaching load from classroom engagement, scientific activity, and extracurricular activity amounting to 807 hours for the 2019-2020 academic year and 686 hours for the 2020-2021 academic year, which significantly exceeds the norm.

Dr. M. Panova is responsible for online education, which was the primary mode of education during the Covid pandemic. She is also responsible for organizing and conducting the state pediatric internship for Bulgarian-language education as well as the website of the Department of Pediatrics and Medical Genetics.

### **Contributions highlighted after reviewing Dr. Margarita Panova's scientific production, on which I would like to place special importance, are as follows:**

#### **I. Contribution in the field of cerebrovascular pathology:**

Dr. Margarita Panova's monograph "Acute Hemiparesis in Childhood" summarizes the contemporary world experience, adapting it through her own extensive clinical experience, significantly expanding our knowledge in the field of the addressed issue. The clinical-anatomical correlation of acute hemiparesis and the localization of the pathological process are examined. Attention is drawn to the phases of the clinical manifestations in central motor neuron impairment, aiding in the correct diagnosis of hemiparesis. Dr. Panova supports the theoretical data with interesting cases from clinical practice. Of particular importance is the presented algorithm for managing a child with acute onset hemiparesis.

2. A case of lenticulostriate vasculitis complicated by ischemic stroke after minimal brain trauma is described for the first time in world literature. Emphasis is placed on the role of lenticulostriate vasculopathy as a predisposition for the occurrence of ischemic stroke. Publication (R 20) has multiple citations in international literature.

3. The first case in Bulgaria of a rare cerebral vascular malformation in childhood - infantile dural arteriovenous fistula (NR 2) in an eight-year-old girl, who manifested exophthalmos, cognitive regression, hydrocephalus, and epileptic status, is described. The patient is the first child in Bulgaria to undergo embolization of a vascular anomaly.

#### **II. Contributions in the field of rare metabolic disorders:**

1. A significant contribution is the identification of the specific ancestral p.Agr 446\* mutation in PDHX (pyruvate dehydrogenase complex component X) gene among Bulgarian Roma people.

Patients of Roma origin with lactate acidosis crisis in the first days or months of life as the most common initial manifestation and delayed psychomotor development and/or seizures in early childhood were studied for the R446\* mutation in the PDHX gene. Study of the R446\* mutation in PDHX is also indicated in older children with impaired physical development and static encephalopathy, similar to cerebral palsy, with spasticity and severe to profound intellectual disability. It is no coincidence that publication R17 is among the most cited.

2. On the same topic, the outlining of specific symptoms of the condition known for several years as Hypomyelination with Atrophy of the Cerebellum and Basal Ganglia (H-ABC) in patients from the Roma ethnic community is highlighted. Based on clinical observations, these patients with the same mutation, severe encephalopathy in early childhood, stridor, opisthotonus, bradypnea, severe hearing and vision impairment, should first be tested for the Roma mutation for H-ABC in UFM1 - publication (R 4).

3. The developed rapid genetic diagnosis after identifying typical clinical and imaging findings of another rare genetic disorder EXOSC3 - related pontocerebellar hypoplasia type 1 with mutation - ancestor in the Roma population (R 13) is also an original scientific contribution.

### **III. Contributions related to epilepsy:**

1. The first systematic screening of the SCN1A gene in Bulgaria was conducted, expanding the spectrum of SCN1A pathology with five new variants from Bulgaria and demonstrating the clinical benefit of confirmatory SCN1A testing, aiding clinicians in early and accurate diagnosis. This is crucial for the choice of appropriate treatment. The identification of pathogenic variants in SCN1A will enhance genetic counseling offered to affected families (R 9, NR 16).

### **IV. Contributions related to infectious diseases:**

1. The first case of laboratory-confirmed subacute sclerosing panencephalitis following the measles epidemic of 2009-2011 is described (R 15). The first cases of subacute sclerosing panencephalitis in Bulgaria were confirmed in three children under 5 years old at the time of the study, who had contracted measles before the age of 2, by positive laboratory results for SSPE.

2. For the first time in Bulgaria, a study was conducted to determine the frequency and types of acute encephalopathies associated with viral infections (AEAVI) among children treated at a third-level pediatric clinic in Bulgaria. Diagnostic criteria are provided. The timely diagnosis of AEAUI allows for timely treatment and a chance of an improved prognosis (R 14).

Dr. Margarita Panova's **clinical-diagnostic activity** provides her with the opportunity to encounter diverse general pediatric pathology as well as pathology in the field of pediatric neurologic diseases, which is reflected in her scientific output. She gains a broad theoretical background that enables her to impart the acquired knowledge and personal experience to future medical professionals.

## **CONCLUSION**

Dr. Margarita Panova meets the criteria and scientometric indicators set forth in the Law and Regulations on the Conditions and Procedure for Acquiring Scientific Degrees and Holding Academic Positions at Medical University-Plovdiv for taking the academic position of "Associate Professor." She has significant scientific-practical contributions, a solid scientific output, and extensive teaching experience.

I recommend that the respected Scientific Jury votes in favour of awarding the academic position of "Associate Professor" to Dr. Margarita Panova, MD.

Reviewer:

Prof. Ivan Litvinenko, MD

Заличено на основание  
Чл.5 §1, 6."В" Регламент (ЕС)2016/679

