

To the Chairman of the Scientific Jury,  
appointed by order No. P-109-269/25.05.2023  
of the Rector of the Medical University of Varna

## OPINION

by Assoc. Prof. Atanas Angelov Atanasov, MD, PhD  
First Department of Internal Medicine,  
Faculty of Medicine, Medical University of Varna  
Member of the Scientific Jury  
for the competition (published in SG 28/28.03.2023)

for holding the academic position of Professor in the field of higher education: 7. Healthcare and sports, professional field: 7.1. Medicine, scientific specialty: Cardiology, for the needs of ES of Cardiology, First Department of Internal Medicine, Faculty of Medicine, Medical University of Varna and First Clinic of Cardiology, University Hospital St. Marina, Varna

By decree N: P-109-269/25.05.2023 of the Rector of the University of Varna, I was appointed as a member of the Scientific Jury, and according to protocol No. 1 of the first meeting of the scientific jury, I was elected to prepare an opinion on the procedure for holding the academic position of Professor for the needs of the Faculty of Medicine, First Department of Internal Medicine and First Cardiology Clinic at the University Hospital St. Marina, Varna. The procedure for announcing the competition was in accordance with the legal requirements and there were no established procedural violations. One candidate submitted documents for the competition: **Assoc. Prof. Mariya Negrinova Negreva, MD, PhD, DSc** - associate professor in the Educational Sector (ES) of Cardiology at the First Department of Internal Medicine at Medical University of Varna (MUV). The information submitted by the candidate fully complies with the Regulations for the Implementation of the Law for the Development of Academic Staff in Bulgaria and the Regulations for the Development of Academic Staff (RDAS) of MUV. The minimum scientometric requirements for participation in the competition have been met.

### 1. Brief biographical data about the candidate

Assoc. Prof. Mariya Negrinova Negreva, MD, PhD, DSc (later in document - MN) graduated from MUV in 2006 and started working at the First Cardiology Clinic with ICU at the University Hospital St. Marina, Varna (SMV). Since 2008, she has been an assistant at the Department of Internal Medicine at MUV. In 2013 she acquired the specialty Cardiology, and in 2015, accordingly, she was awarded the degree of "Doctor" with dissertation title: *Dynamics of oxidative stress in patients with paroxysmal atrial fibrillation*. Since 2016, she has worked as an associate professor in cardiology. MN had several specializations, in Germany and Italy, mainly in the field of echocardiography. In 2022 she was awarded the degree "Doctor of Sciences" with dissertation title: *Early abnormalities in the coagulation and fibrinolytic system in paroxysmal atrial fibrillation*.

### 2. Research output of the candidate: quantitative and qualitative indicators

Assoc. Prof. Mariya Negreva has presented 116 scientific works, 22 of which are after the acquisition of the degree "Doctor" and are subject to peer review:

1. Monograph: Negreva M. Platelets – fundamental and clinical projections. PC Clinic 2023; ISBN 978-619-91772-3-5, 185 pages.
2. Scientific publications indexed in Web of Science/Scopus: 4 items.

- A significantly enhanced platelet activity was found in the first 24 hours of the clinical manifestation of paroxysmal atrial fibrillation through the established increased plasma levels of  $\beta$ -thromboglobulin and platelet factor-4. It is a serious prerequisite for the development of a hypercoagulable state.
- A modern view of megakaryopoiesis and thrombopoiesis, morphology and hemostatic functions of platelets is presented. The importance of platelet pathomorphology in clinical cardiology practice is clearly outlined, and own results regarding platelet activity in paroxysmal atrial fibrillation are also presented

Another important direction in MN research is the study of echocardiographic indicators and serum levels of NT-proBNP in patients with an implanted dual-chamber pacemaker. Early left atrial remodeling after DDDR dual-chamber pacemaker implantation (up to week 24) was demonstrated, with a significant increase in left atrial volume index and in serum NT-proBNP levels. Size and pump function do not undergo significant early changes. Early assessment of cardiac function using left atrial volume and serum NT-proBNP levels after DDDR pacemaker implantation is recommended. Another publication analyzed the frequency of thromboembolic complications in a population with implanted cardiac devices and need to study hemostasis in view of the possibilities of their reduction.

An interesting aspect of the publications is the research on the application of mathematical methods for analysis of cardiac data. Analysis of heart rate variability from Holter-ECG records using the Poincaré plot method (SD1) and Detrended Fluctuation Analysis ( $\alpha_2$  and  $\alpha_{all}$ ) has excellent diagnostic value for supraventricular extrasystoles. A possibility was found to distinguish patients with heart failure by non-linear methods of heart rate variability analysis.

A study in the field of cardiac surgery found a difference in the nature and frequency of neurological complications after coronary artery bypass graft and valve replacement surgery. Differences in risk factors for neurological complications after coronary artery bypass grafting and valvular prosthesis surgery have been clarified.

Two of the publications are in the area of nursing care for cardiovascular patients. The importance of nursing care in ambulatory and inpatient settings for educating and motivating patients with cardiovascular disease to change to a healthier lifestyle is outlined.

In the presented university textbook: Vitliyanova K, Tasheva R, Negreva M. Clinical Echocardiography, the possibilities of modern echocardiography for diagnosis, assessment and follow-up of cardiovascular diseases are presented in detail with color illustrations.

Other directions in MN research: endodontic pathology in patients with cardiovascular diseases; assessment of hemodynamic characteristics at high-normal arterial pressure by impedance cardiography and capillaroscopy; pharmacotherapy in heart failure and dyslipidemia.

#### **4. Participation in scientific projects:**

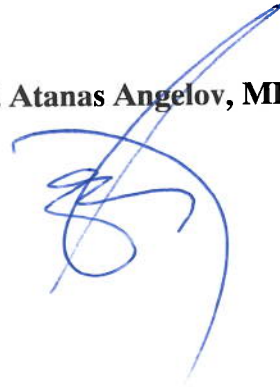
MN is a participant in 2 scientific projects at the Bulgarian National Science Fund (BNSF) at the Ministry of Education and Science:

1. Research of the Application of New Mathematical Methods for the Analysis of Cardiac Data; 2018.
2. Circulating Histone Proteins as Biomarkers of Disease (CHiP-BiD); 2021

**In conclusion,** MN is a cardiologist with research interests in various areas of modern cardiology. Her scientific output is significant in terms of scope and quality, with numerous international scientific publications. She takes an active part in the editorial boards of Bulgarian and international journals. All this gives me reason to agree that MN fully meets the requirements of the Law for the Development of Academic Staff in Bulgaria and RDAS of the MUV. I propose to the esteemed scientific jury that the academic position of Professor be awarded to Assoc. Prof. Mariya Negrinova Negreva, MD, PhD, DSc in the scientific specialty of Cardiology at the MUV.

Varna, July 9th, 2023

**Assoc. Prof. Atanas Angelov, MD, PhD**

A handwritten signature in blue ink, consisting of a large, stylized initial 'A' followed by a series of loops and a long, sweeping tail that curves upwards and to the right.