

REVIEW

by Prof. Dr. Mariana Ivanova Goycheva, MD, PhD

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Member of the Scientific Jury pursuant to Order No. 109-274 dated July 30, 2026, issued by the Rector of “Prof. Dr. Paraskev Stoyanov” Medical University – Varna

Re: Competition for the academic position of “Associate Professor” in the specialty of “Rheumatology,” professional field 7.1. Medicine, field of higher education 7. Health Care and Sports—one position, a 0.5-FTE position for the Department of Cardiology and Rheumatology, Faculty of Medicine, and 1 full-time position for the Rheumatology Clinic at the “Sveta Marina” University Hospital – EAD, Varna, published in the State Gazette, Issue No. 50/June 2, 2026.

Dr. Simona Bogdanova-Petrova, MD, is the sole candidate in the competition.

Pursuant to Protocol No. 1 from the meeting of the scientific jury, appointed by Order No. R-109-274/July 30, 2026, of the Rector of the Medical University of Varna, I have been designated to prepare a review.

This review is based on the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria (LDASRB) and the Regulations for the Implementation of the LDASRB, as well as the Regulations for the Development of Academic Staff at Medical University – Varna.

Brief information on the candidate's career development

Dr. Simona Bogdanova-Petrova, M.D., graduated from the Medical University of Varna in 2009. Her entire professional career has been at the “St. Marina” University Hospital in Varna, where she was appointed as a physician in early 2010 and subsequently held the positions of resident physician and assistant physician. Since May 30, 2024, she has held the position of Chief Resident in Rheumatology at the Rheumatology Clinic of the “St. Marina” University Hospital in Varna. Since September 2015, she has been an assistant professor at the Medical University of

Varna, initially in the Department of Clinical and Medical Sciences, and subsequently in the Departments of Internal Medicine, First Department of Internal Medicine, and the Department of Cardiology and Rheumatology (Rheumatology Teaching Unit) at the Medical University of Varna, where she currently works.

From 2022 to 2023, she completed a self-directed doctoral program at the Department of Propaedeutics of Internal Medicine, Medical University of Varna, and subsequently earned her Ph.D. after successfully defending her dissertation titled “Pain as Part of the Rheumatological Manifestations of COVID-19 Viral Infection” (December 21, 2023). She has been certified in the specialty of Rheumatology since June 1, 2017.

Dr. Bogdanova holds an additional certification in musculoskeletal ultrasound—basic level—with training conducted by the Bulgarian Rheumatology Society (BDS), as well as in capillaroscopy and microcirculation in rheumatic and musculoskeletal diseases (EULAR, 2024). She is fluent in written and spoken Bulgarian, English, Macedonian, and Serbian. She is a member of the Bulgarian Society of Rheumatology, the Bulgarian Medical Society for Osteoporosis and Osteoarthritis, and the Bulgarian Medical Association (BMA). She has participated in numerous international and national rheumatology conferences, as well as in seven clinical trials.

The candidate's research work

In this competition, Dr. Simona Bogdanova, M.D., is participating with a total of 18 scientific papers, of which:

- ✓ Dissertation for the degree of “Doctor”
- ✓ Habilitation thesis—monograph “Pain, Mood, and the Relationship Between Them,” 2025, ISBN 978-619-241-401-6
- ✓ Publications and papers published in scientific journals, peer-reviewed and indexed in world-renowned scientific databases (Applied Sciences, Antibodies, World Journal of Clinical Cases, BMC Rheumatology, Rheumatology International, Rheumatology)—13 in total
- ✓ Publications in non-peer-reviewed scientific journals—2
- ✓ Full-text publications in scientific journals that exceed the minimum scientometric requirements for the academic rank of “associate professor” (Med Post) — 1

✓ Citations in international sources — 8

In addition to those presented in the competition, the candidate has participated in over 40 scientific conferences in Bulgaria and abroad, presenting 52 papers.

Table 1. Minimum point requirements by indicator group for the academic position of “Associate Professor” at the Medical University of Varna

Group of indicators	“Associate Professor”	Presented by Dr. S. Bogdanova
A Doctoral dissertation for the academic degree of “Doctor”	50	50
B Habilitation thesis — monograph	100	100
C Publications	200	286.81
D Citations	80	120

The scientometric indicators meet the minimum requirements for the candidate’s research activity for the academic position of “associate professor” in accordance with the Regulations on the Development of Academic Staff at Prof. Dr. Paraskev Stoyanov Medical University—Varna.

Her scientific work focuses on the following main areas: pain and rheumatological manifestations of COVID-19; epidemiology, prevention, and diagnostic and therapeutic guidelines for immune-mediated inflammatory joint diseases; modern approaches to the treatment of systemic connective tissue diseases; challenges in clinical practice arising from rare rheumatological manifestations; and artificial intelligence in rheumatology—innovative methods in modern diagnosis and treatment. The results have been published in prestigious journals and cited in the international scientific literature, which attests to their significant contribution. A large portion of the publications are innovative in nature.

A key area of focus is research on rheumatological manifestations of COVID-19. An analysis has been conducted of the possible immunological mechanisms underlying these manifestations. Data are presented on the role of pro-inflammatory cytokines, immune dysregulation, and autoimmune processes as potential factors in the development of rheumatic complications in SARS-CoV-2 infection. These studies expand existing knowledge regarding the

clinical spectrum of musculoskeletal manifestations of COVID-19 and contribute to a better understanding of the pathogenetic mechanisms, diagnostic approach, and therapeutic management in patients suffering from the disease. Of particular importance are the analyses conducted on the impact of the infection on patients with autoimmune rheumatic diseases, as well as the specificities of their treatment during the pandemic.

A significant contribution is made by the analysis and systematization of current scientific data on pain as a multifactorial biopsychosocial phenomenon and a pathophysiological process that has a significant impact on patients' quality of life and functional capacity. The study examines current concepts of nociception, peripheral and central sensitization, as well as the role of inflammatory mediators in the onset and chronicity of pain syndrome. A comprehensive conceptual framework is presented that integrates current knowledge regarding the mechanisms of pain in inflammatory and infectious diseases.

With her participation, research has been conducted into the pathogenetic mechanisms of immune-mediated inflammatory joint diseases and, in particular, the role of endothelial dysfunction as a factor in the accelerated development of atherosclerosis and increased cardiovascular risk. In this regard, the team she works with has studied serum levels of the intercellular adhesion molecule ICAM-1 and the vascular cell adhesion molecule VCAM -1 in patients with ankylosing spondylitis and psoriatic arthritis and demonstrated their potential value as biomarkers for endothelial activation and subclinical vascular damage.

She was part of a team that evaluated the efficacy and safety of targeted therapy with Janus kinase inhibitors in real-world clinical practice among patients with inflammatory joint diseases. Patients with systemic lupus erythematosus treated with belimumab were prospectively followed, and data from real-world clinical practice regarding the efficacy and safety of this biologic therapy were presented. The current mechanisms of the immunomodulatory action of intravenous immunoglobulins and their role in the treatment of various autoimmune rheumatic diseases are analyzed. A review published in the journal Applied Sciences systematizes the scientific evidence regarding the use of algorithms for automated interpretation of X-rays, ultrasound, magnetic resonance imaging, and computed tomography, as well as the application of artificial intelligence in the analysis of laboratory parameters, autoantibodies, biomarkers, and multimodal clinical data. The possibilities for developing predictive models for early diagnosis, assessment of disease

activity, prediction of structural progression, and therapeutic response are presented. The candidate demonstrates strong collaboration and impressive knowledge both in clinical practice and within research teams comprising specialists from the same and other fields.

The candidate's teaching and academic activities

Dr. Simona Bogdanova is a faculty member with experience teaching at various levels. She teaches lectures and seminars in Rheumatology (BEO) to fourth-year medical students, seminars in Propaedeutics of Internal Medicine (BEO) to third-year students in the third-year “Dental Medicine” students, serves on semester and state examination committees, teaches continuing medical education (CME) courses for physicians specializing in “Rheumatology,” a course on Capillaroscopy, and leads workshops at the “Black Sea Symposium for Young Scientists in Biomedicine” and the “Black Sea Rheumatology Days.” As a lecturer in the Department of Cardiology and Rheumatology, Faculty of Medicine, she had a teaching load of 196 hours for students in the Bulgarian-language program for the 2020–2021 academic year; for the 2021–2022 academic year - 221 hours of teaching load for students in Bulgarian-language programs for the 2022/2023 academic year - 192 hours of teaching load for students in Bulgarian-language programs for the 2023/2024 academic year - 182 hours of course load for students in Bulgarian- and English-language programs for the 2024/2025 academic year - 192 hours of course load for students in Bulgarian-language programs. Submits a certificate attesting to a total teaching experience of over 10 years at MU – Varna.

The candidate's diagnostic and treatment activities

According to the certificate provided, Dr. Simona Bogdanova has a total of 16 years and 4 months of professional experience and 10 years and 8 months of experience as a rheumatologist. She is an accomplished clinician and rheumatologist. She competently works with patients in daily clinical practice and in prescribing therapy. She possesses the necessary expertise to perform capillaroscopy and to apply other imaging methods in rheumatology. She actively participates in the diagnostic, therapeutic, and consultative activities of the Rheumatology Clinic at the “Sveta Marina” University Hospital in Varna. She has served as a co-investigator in several clinical trials of medications for the treatment of rheumatic diseases.

Conclusion

The candidate participating in this competition meets the requirements of the Law on the Development of Academic Staff of the Republic of Bulgaria, the Regulations for the Implementation of the Law on the Development of Academic Staff of the Republic of Bulgaria, and the Regulations on the Development of Academic Staff at Medical University–Varna for the academic position of “Associate Professor.”

Based on the foregoing, I give a **positive** evaluation of Dr. Simona Bogdanova-Petrova, M.D., and propose that the Scientific Jury approve her appointment to the academic position of “Associate Professor” in the specialty of “Rheumatology,” professional field 7.1. Medicine, field of higher education 7. Health Care and Sports—one position, a 0.5-FTE position for the Department of Cardiology and Rheumatology, Faculty of Medicine, and 1 full-time position at the Rheumatology Clinic at UMBAL “Sveta Marina” – EAD, Varna.

08.09.2026

Sofia

Signature:

Заличено на основание чл. 5,
§1, б. „Б“ от Регламент (ЕС)
2016/679

/Prof. Dr. Mariana Ivanova, M.D., Ph.D./