

OPINION

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Member of the scientific jury for the competition (State Gazette No. 50/02.06.26) for the academic position of "Associate Professor" in the field of higher education 7. "Health Care and Sports," professional area 7.1. "Medicine" and the scientific specialty "Rheumatology" for the needs of the Faculty of Medicine,
Department of Cardiology and Rheumatology,
and the Rheumatology Clinic at the "St. Marina" University Hospital in Varna

Re: Competition for the academic position of "Associate Professor" in the scientific specialty of "Rheumatology" for the Faculty of Medicine, the Department of Cardiology and Rheumatology at "Prof. Dr. Paraskev Stoyanov" Medical University—Varna and the Rheumatology Clinic at "St. Marina" University Hospital—Varna

By order of the Rector of MU Varna No. R-109-274/ July 30, 2026, I have been appointed as a member of the scientific jury, and pursuant to Protocol No. 1 of the first meeting of the scientific jury, I have been selected to prepare an opinion on the procedure for conferring the academic rank of "Associate Professor" for the needs of the Faculty of Medicine, the Department of Cardiology and Rheumatology, and the Rheumatology Clinic at St. Marina University Hospital in Varna. The procedure for announcing the competition complies with legal requirements; no procedural violations have been identified. One candidate—Dr. Simona Bogdanova-Petrova, M.D. submitted an application for the competition.

1. Brief biographical information on the candidate

Dr. Simona Bogdanova was born in 1984 in Kocani, Republic of North Macedonia. She graduated with honors from the Mathematics High School in her hometown. In 2009, she graduated with honors from the "Prof. Dr. Paraskev Stoyanov" Medical University in Varna and was awarded the prize for top-performing international students, entitling her to pursue a specialization of her choice. In 2010, she was appointed as a resident at the Rheumatology Clinic in Varna; in 2012, she was admitted to the rheumatology residency program at the same clinic; and in 2017, she completed her specialty in Rheumatology. In 2015, after winning a competitive selection process, she was also appointed as 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 Medical University of Varna, where she currently works. In 2024, she was elected senior assistant to the Rheumatology Board at the First Department of Internal Medicine, Medical University of Varna.

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).

2. The Candidate's research activity—assessment of quantitative and qualitative Indicators

The total number of scientific publications by the candidate during the period from 2012 to 2026, which spans 10 active years of research, includes:

- 1. Monograph:** Simona Bogdanova. Pain, Mood, and the Relationship Between Them. ISBN: 978-619-241-401-6. 160 pp.
- 2. Dissertation for the degree of “Doctor of Science” on the topic:** “Pain as Part of the Rheumatological Manifestations of COVID-19 Viral Infection.” 167 pp.
- 3. Full-text publications in scientific journals, peer-reviewed and indexed in a global scientific database -** (Applied Sciences, Antibodies, World Journal of Clinical Cases, BMC Rheumatology, Rheumatology International, Rheumatology)—13 publications.
- 4. Full-text publications in non-peer-reviewed scientific journals with scientific review –** 2 items.
- 5. Full-text publications in scientific journals that do not meet the minimum requirements for participation in the competition –** (Med Post) – 1 item.
- 6. Posters accompanied by presentations and published abstracts at national and international congresses and conferences—**19.
- 7. Presentations at national congresses and conferences with international participation, with published abstracts—**3.

Dr. Simona Bogdanova is the sole author of two scientific papers. She is the first author of five publications and the second author of six. In six of the publications, Dr. Bogdanova is the third or subsequent author. Most of the scientific papers have been published in English or in bilingual journals. Nine of the publications appear in journals with an impact factor—a total IF of 15.34. Attached are 8 citations of Dr. Simona Bogdanova's scientific papers, all of which appear in scientific publications that are peer-reviewed and indexed in a global scientific information database.

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

The scientometric indicators meet the minimum requirements for the candidate's scientific activity to hold the academic position of “associate professor” in accordance with the Regulations for the Development of Academic Staff at MU “Prof. Dr. Paraskev Stoyanov” – Varna.

3. Research areas in which the candidate has primarily worked and where his scientific publications are concentrated:

According to the academic record submitted, the scientific works and the results of the research are grouped into five thematic areas:

1. Pain and rheumatological manifestations in COVID-19
(A 1, B 3, D 7.3, D 7.12, D 7.13)
2. Immune-mediated inflammatory joint diseases—epidemiology, prevention, and diagnostic and therapeutic guidelines
(D 7.7, D 7.8, D 7.9, D 7.10, D 7.11)
3. Systemic connective tissue diseases—current approaches to treatment (D 7.2, D 7.5, D 7.6, D 8.1)

4. Rare manifestations relevant to the rheumatologist—challenges in clinical practice (G 7.4, G 8.2, publications beyond the minimum scientometric requirements)
5. Artificial intelligence in rheumatology—innovative methods in modern diagnosis and treatment (G 7.1)

4. Scientific and applied contributions

A key area of Dr. Simona Bogdanova's research focuses on the study of pain and rheumatological manifestations associated with COVID-19 infection; her research contributes to expanding our understanding of the pathogenic mechanisms, clinical characteristics, and long-term effects of the disease on the musculoskeletal system.

- In-depth studies have been conducted on the prevalence, clinical characteristics, and duration of arthralgia, myalgia, and other musculoskeletal manifestations in patients with SARS-CoV-2 infection. The main pathophysiological mechanisms have been analyzed, including the role of pro-inflammatory cytokines, immune dysregulation, and autoimmune processes as potential factors in the onset and maintenance of rheumatological complications.
- The scientific studies provide a systematic analysis of the impact of COVID-19 on patients with autoimmune rheumatic diseases, with an emphasis on the specific aspects of their clinical follow-up and therapeutic management during the pandemic. Current concepts regarding the mechanisms underlying the development of persistent chronic pain following illness are examined, as well as the possibilities for applying an integrated multidisciplinary diagnostic and therapeutic approach.
- A significant scientific contribution is the critical analysis and systematization of current scientific evidence regarding pain as a complex biopsychosocial phenomenon. In the publications, pain is interpreted not only as a clinical manifestation of SARS-CoV-2 infection but also as an independent pathophysiological process that determines patients' functional capacity, quality of life, and long-term prognosis. This contributes to a deeper understanding of the mechanisms of post-COVID syndrome and its rheumatological aspects.

The monograph **Pain, Mood, and the Relationship Between Them**, presented by Dr. Simona Bogdanova, is an original interdisciplinary scholarly work that significantly transcends the traditional boundaries of rheumatology by integrating contemporary advances from the fields of neuroscience, psychology, psychiatry, and clinical medicine. The study examines pain as a complex biopsychosocial phenomenon, whose onset and clinical manifestation are determined by the dynamic interaction between biological, psychological, and social factors.

In the monograph, pain is presented as a universal human experience with a distinctly individual character, shaped by genetic, neurobiological, psycho-emotional, cultural, and social determinants. The thesis that the perception and interpretation of the pain stimulus are not determined solely by the degree of tissue damage, but are the result of complex mechanisms of central and peripheral processing influenced by prior experience, cognitive processes, and emotional state, is convincingly argued. In this way, pain is viewed not merely as a sensory symptom, but as a complex psychophysiological state with significant consequences for behavior, functional capacity, and quality of life.

Particular attention is given to chronic pain as a significant medical, social, and economic problem associated with substantially increased morbidity, reduced work capacity, significant costs to health care systems, and a serious deterioration in the quality of life of affected patients. The article analyzes current concepts regarding its pathogenesis, clinical significance, and opportunities for optimizing diagnostic and therapeutic approaches.

A significant scientific contribution of this monograph is the in-depth distinction between nociception—as a neurophysiological process of perceiving and processing potentially harmful stimuli—and the subjective experience of pain. It is emphasized that nociceptive activity is not a prerequisite for the onset of pain sensation, and that pain can persist regardless of the presence of active peripheral nociceptive stimulation. The conceptual distinction presented is essential for understanding the mechanisms of chronic pain and is consistent with current scientific understanding in this field.

A significant portion of the monograph is devoted to a systematic analysis of the bidirectional relationship between chronic pain and mental health disorders. Compelling arguments are presented in support of the need for an integrated biopsychosocial model in the diagnosis and treatment of patients, one that combines pharmacological, psychological, and rehabilitative interventions. The author argues that such a multidisciplinary approach creates the conditions for improving patients' functional capacity, quality of life, and long-term prognosis, while simultaneously helping to reduce the social and economic burden associated with chronic pain.

This monograph stands out for its focus on current issues, its critical analysis of contemporary scientific evidence, and its successful integration of fundamental and clinical knowledge. It represents a significant scientific contribution with practical applications and lays a solid foundation for future interdisciplinary research in the fields of pain, rheumatology, and mental health.

In the field of immune-mediated inflammatory joint diseases, Dr. Simona Bogdanova's scientific work focuses on current issues related to pathogenesis, diagnosis, assessment of disease activity, prevention, and modern therapeutic strategies, with a primary focus on seronegative spondyloarthropathies, including axial spondyloarthritis and psoriatic arthritis.

- These scientific publications summarize and critically analyze current advances in the diagnosis, monitoring, and treatment of immune-mediated inflammatory joint diseases, presenting the latest principles for early detection, assessment of disease activity, prevention of complications, and optimization of the therapeutic approach. In this way, they contribute to the implementation of current recommendations in clinical practice.
- A significant scientific contribution is the study of the pathogenic mechanisms linking chronic inflammation to increased cardiovascular risk in patients with spondyloarthritis. By measuring serum concentrations of the intercellular adhesion molecule (ICAM-1) and vascular cell adhesion molecule (VCAM-1) in patients with ankylosing spondylitis and psoriatic arthritis, their potential role as biomarkers for endothelial activation and early subclinical vascular damage has been demonstrated. The findings expand our understanding of the mechanisms underlying accelerated atherogenesis in these diseases and underscore the need for timely assessment of cardiovascular risk.
- Studies on the efficacy and safety of targeted therapy with Janus kinase inhibitors in patients with inflammatory joint diseases have made a significant contribution. The

dynamics of disease activity, functional capacity, and safety profile were monitored under real-world clinical conditions. The results confirm the high clinical efficacy of the therapy, rapid control of inflammatory activity, significant improvement in functional status, and a favorable safety profile, which supports the place of this therapeutic class in modern treatment algorithms.

- Research studies on non-radiographic axial spondyloarthritis contribute to a better characterization of the early stages of the disease. Through a comparative analysis of the non-radiographic and radiographic forms, differences in clinical presentation, disease activity, functional impairment, and quality of life were assessed. The data obtained indicate that the absence of structural radiographic changes does not correlate with a lower disease severity, which supports the need for early diagnosis and timely initiation of effective treatment.
- Studies focusing on vaccine prophylaxis in patients with inflammatory joint diseases have made scientific and practical contributions. Adherence to recommended immunization schedules and the factors determining vaccination coverage were analyzed. It was found that, despite existing international recommendations, the level of immunization coverage remains unsatisfactory, with the main reasons being insufficient patient awareness and limited discussion of vaccinations in routine clinical practice. The results underscore the need for more active implementation of preventive strategies among this high-risk population.

In the field of systemic connective tissue diseases, Dr. Simona Bogdanova's research focuses on evaluating current therapeutic approaches, monitoring organ damage, and optimizing diagnostic and treatment strategies for autoimmune diseases.

- The results of the prospective study in patients with systemic lupus erythematosus treated with the biologic therapy belimumab represent a significant scientific contribution. In real-world clinical practice, data on the efficacy and safety of the treatment were collected, demonstrating a statistically and clinically significant reduction in disease activity, as assessed by the SELENA-SLEDAI index, as well as a significant reduction in the need for maintenance glucocorticoid therapy while maintaining a favorable safety profile. The results obtained contribute to the accumulation of real-world clinical evidence regarding the use of belimumab in Bulgarian rheumatology practice.
- Research focused on monitoring organ damage in immune-mediated diseases by assessing proteinuria as a biomarker of renal activity and therapeutic response in glomerular damage has made a significant contribution. A critical analysis of current data is presented, confirming that an early and sustained reduction in proteinuria is a reliable predictor of a favorable therapeutic outcome and a better long-term prognosis. Thus, the role of proteinuria as an accessible, informative, and clinically applicable indicator for monitoring patients in daily practice is substantiated..
- Scientific publications on intravenous immunoglobulins summarize the current state of knowledge regarding their immunomodulatory mechanisms of action and their clinical application in various autoimmune diseases. An in-depth analysis is presented of both established therapeutic indications and new possibilities for use, including off-label applications. These studies contribute to a better understanding of the role of intravenous immunoglobulins in modern immunotherapy and support a personalized therapeutic approach for patients with complex systemic autoimmune diseases.

In the field of rare clinical manifestations relevant to rheumatology practice, Dr. Simona Bogdanova's research focuses on the presentation and analysis of unusual extra-articular manifestations of rheumatic and systemic diseases, as well as on expanding knowledge regarding the interdisciplinary connections between rheumatology and other medical specialties.

- A significant scientific contribution is the presentation of a rare extra-articular vascular manifestation in seronegative spondyloarthropathies—aortitis—which, in certain cases, may precede typical joint symptoms and be the first clinical manifestation of the disease. Discussing this rare but potentially serious complication helps raise clinical awareness of the need for early recognition, timely diagnosis, and a multidisciplinary approach in patients with spondyloarthropathies.
- Another scientific study analyzed musculoskeletal manifestations in endocrine disorders, including polycystic ovary syndrome and thyrotoxicosis. The presentation of these clinical associations underscores the importance of a differential diagnostic approach in patients with musculoskeletal complaints and the need for an integrated evaluation of patients with symptoms that may be common to various pathological conditions.

In the field of artificial intelligence in rheumatology, scientific research is focused on exploring the potential applications of modern digital technologies in the diagnosis, assessment of disease activity, and prediction of the course of rheumatic diseases. The role of artificial intelligence as an innovative tool to support clinical decision-making and a personalized therapeutic approach in rheumatology is discussed.

- A significant contribution is the systematization of current scientific evidence regarding the application of artificial intelligence-based algorithms in the diagnostic imaging of rheumatic diseases. The study analyzes the possibilities for automated processing and interpretation of data from X-rays, ultrasound, magnetic resonance imaging, and computed tomography, including the prospects for improving diagnostic accuracy, standardizing assessment, and enabling early detection of pathological changes.
- A significant scientific contribution is the examination of the application of artificial intelligence in the analysis of complex clinical and laboratory data, including autoantibodies, biomarkers, and multiparametric indicators. We present current approaches for integrating various sources of information through machine learning and other algorithmic models with the aim of improving diagnostic accuracy and personalizing patient care.
- The research highlights the potential of artificial intelligence to develop predictive models for rheumatic diseases, aimed at early diagnosis, assessment of disease activity, prediction of structural progression, and forecasting of therapeutic response. The concepts presented highlight the importance of digital transformation in rheumatology and the opportunities for developing more precise, personalized, and data-driven medicine.

In summary, the candidate's research covers a broad spectrum of current areas in modern rheumatology; a large portion of the publications are innovative in nature, and most of the findings have been published in prestigious journals and cited in the international scientific literature, which attests to their significant contribution.

5. Teaching and instructional activities

Dr. Simona Bogdanova's teaching career is characterized by many years of consistent dedication to the education of students and residents. Her total teaching experience amounts to 10 years and 8 months; during this period, she has held the academic positions of assistant professor for 8 years and 8 months and senior assistant professor for the past 2 years.

As part of her university teaching activities, Dr. Bogdanova actively participates in the training and education of medical students, conducting a comprehensive course of practical exercises in rheumatology for both Bulgarian- and English-language programs. In addition to practical training, she contributes to students' theoretical education by participating in the rheumatology lecture series for students majoring in "Medicine." As part of her teaching activities, she also participates in the internal medicine training of students in the "Dental Medicine" program, contributing to interdisciplinary medical education.

Dr. Bogdanova plays an active role in assessing students' knowledge and skills by serving on semester and state examination committees for both Bulgarian-language and English-language programs. She also contributes to the development and updating of exam materials by participating in the creation of test questions for semester and state exams in internal medicine for the "Medicine" program.

A significant component of her teaching activities is related to postgraduate education and the training of physicians specializing in rheumatology. Dr. Bogdanova actively participates in the theoretical training of residents, including by conducting educational seminars as part of the core courses in the specialty and in the field of capillaroscopy.

Her participation in the development of educational resources—including the creation of instructional videos for students and residents—as well as her active involvement in organizing and conducting hands-on workshops at scientific conferences and professional forums, represents a significant contribution to modern medical education.

Dr. Bogdanova's teaching activities demonstrate a consistent commitment to the development of medical education, the introduction of modern teaching methods, and the training of future specialists in the field of rheumatology.

6. Clinical practice

Dr. Simona Bogdanova's clinical work is rooted in her long-standing professional commitment to the Rheumatology Clinic at St. Marina University Hospital, where she worked for 16 years and 4 months, actively participating in the diagnostic and treatment process and in the comprehensive follow-up of patients with rheumatic diseases.

In her professional practice, Dr. Bogdanova-Petrova demonstrates in-depth knowledge and high clinical competence in the field of modern rheumatology. She has acquired additional qualifications through specialized training at renowned international centers in the fields of joint ultrasound, capillaroscopy, the interpretation of imaging studies, and crystallography. These additional competencies contribute to the application of modern diagnostic methods and to improving the quality of care for patients with complex rheumatological conditions.

A significant part of her clinical and scientific work involves participation in clinical trials evaluating the efficacy and safety of innovative therapeutic approaches in patients with inflammatory joint diseases and systemic connective tissue diseases. Her accumulated experience in conducting clinical trials contributes to the integration of modern therapeutic strategies into daily rheumatology practice.

Dr. Bogdanova actively participates in the work of specialized hospital committees responsible for evaluating patients and determining treatment strategies for severe and complex rheumatological diseases. She is a member of committees for the treatment of patients with moderate-to-severe active seropositive rheumatoid arthritis, active juvenile idiopathic arthritis, active and progressive psoriatic arthritis, severe active ankylosing spondylitis, as well as patients with systemic lupus erythematosus requiring the use of modern disease-modifying therapies. She also serves on committees overseeing the use of medications off-label, which requires a thorough assessment of individual risk and expected therapeutic benefit.

Her extensive clinical experience, high level of professional responsibility, and ability to comprehensively address diagnostic and therapeutic challenges establish Dr. Bogdanova-Petrova as a recognized specialist in the field of rheumatology. Her active involvement in the care of patients with complex clinical cases, as well as her work in multidisciplinary

The combination of extensive clinical experience, in-depth theoretical training, and a commitment to continuous professional development enables Dr. Bogdanova-Petrova to successfully integrate the latest advances in rheumatology into both her clinical practice and her academic work. These qualities distinguish her not only as a highly qualified clinician but also as a valuable academic, capable of training and supporting the development of young specialists and actively contributing to scientific research in the field of rheumatology.

7. Critical Comments

Looking ahead, I would recommend that Dr. Bogdanova continue to actively develop her scientific ideas by transforming them into more comprehensive research projects with clearly defined scientific objectives and methodology.

It would be advisable for her future work to focus on more active publication in international scientific journals that are peer-reviewed and indexed in established global databases, as well as on broader participation in international scientific forums. This would contribute to increasing the international visibility of her scientific work, strengthening her confidence as a researcher, and expanding her scientific collaborations.

The clinical and academic experience she has accumulated to date, combined with her active commitment to training young physicians, lays the groundwork for Dr. Bogdanova's development as an established scientific mentor and for the formation of her own research direction, which will attract and motivate younger colleagues to engage in research.

In conclusion, Dr. Simona Bogdanova-Petrova is a recognized specialist in the field of rheumatology, with a consistently developed track record in clinical practice, research, and teaching. Her scientific output is characterized by its significant volume, high quality, and the relevance of the topics studied, with a substantial portion of her publications appearing in renowned international scientific journals that are cited and indexed in established global databases.

The research achievements, teaching activities, accumulated clinical experience, and professional contributions of Dr. Simona Bogdanova-Petrova meet the requirements of the Regulations for the Implementation of the Law on the Development of Academic Staff in the Republic of Bulgaria (PRAS), as well as the regulatory requirements of Medical University–Varna for holding the academic position of “associate professor.”

Based on a comprehensive evaluation of the submitted materials, the candidate’s scientific contributions, teaching activities, and professional achievements, I offer my positive assessment and propose that the esteemed scientific jury vote in favor of awarding the academic position of “associate professor” in the scientific specialty of “Rheumatology” to Dr. Simona Bogdanova-Petrova, for the needs of the Department of Cardiology and Rheumatology at the Faculty of Medicine of the Medical University of Varna.

20.09.2026
Varna

Signature:
/Prof. Dr. Rumen Malinov Stoilov, M.D./

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