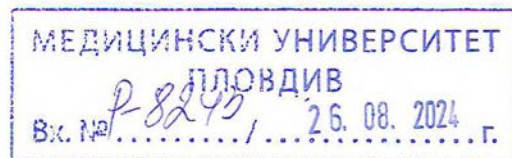


REVIEW



by **Victoria Sarafian, MD, PhD, DMSc,**

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Specialist in Clinical Immunology and Medical Biology,
at the Department of Medical Biology.

Regarding a competition for the academic position 'Professor' in the field of higher education 7. Health and Sport, Professional field 7.1. Medical Sciences, scientific specialty "Rheumatology", Department of Propaedeutics of Internal Diseases, Faculty of Medicine, Medical University - Plovdiv, announced in the State Gazette, issue 35 of 19.04.2024.

The reviewing of the materials submitted for the competition is based on the requirements of the Law on the Development of Academic Staff in the Republic of Bulgaria, the Regulations for its implementation, as well as the Regulations for the Conditions and Procedure for Acquisition of Scientific Degrees and Holding Academic Positions at MU-Plovdiv.

The review is prepared on the basis of the Order No. P-2383/11.07. 2024 of the Vice Rector of MU-Plovdiv.

General presentation of the competition materials

Two candidates – Rositsa Karalilova, MD, PhD, DSc and Sevdalina Lambova, MD, PhD - both of them Associate Professors at Medical University - Plovdiv, Department of Propaedeutics of Internal Diseases have applied for the competition.

The set of materials submitted by the candidates on electronic media are in accordance with the recommended minimum scientific-metric requirements for academic positions in the Regulations of MU-Plovdiv.

Assoc. Prof. Rositsa Karalilova

1. Career Development

Rositsa Karalilova graduated in 2005 from Medical University - Plovdiv as a Master of Medicine and the same year started specialization in Rheumatology at the University Hospital "Kaspela", Plovdiv, Bulgaria. She has been working there as a medical resident ever since.

After successfully passing a competitive examination in 2013, she was appointed as an assistant professor at the Propaedeutics of Internal Diseases of the Medical University - Plovdiv. In 2014 she obtained a specialty in rheumatology. Parallel to her medical and teaching activities, she worked on her PhD, which she successfully defended in 2018. In the same year, she was appointed as a senior assistant professor and has been serving as the chief administrative assistant until now.

In 2021, she defended her dissertation for the degree of Doctor of Science with work again focused on the diagnosis of systemic sclerosis, and the following year she was already Associate Professor of Rheumatology. In 2024, she was elected by the Faculty Council as Deputy Dean for Academic Affairs of the Faculty of Medicine. In this capacity, she chairs the Committee on Teaching Activities of the same Faculty.

Assoc. Prof. Karalilova is a certified European lecturer in Musculoskeletal Ultrasonography and teaches courses in joint ultrasonography under the auspices of EULAR. She is a member of the Governing Board of the Bulgarian Association of Musculoskeletal Ultrasound (BAMSU) and its President since 2023 and of the OMERACT (Outcome Measures in Rheumatology) and TUI (Targeted Ultrasound Initiative) groups.

In conclusion, Assoc. Prof. Karalilova is an accomplished researcher and educator who has purposefully pursued a successful academic career. She is a

clinician with a strong background and clearly defined professional and research interests. At the same time, she is engaged in considerable administrative work and scientific supervision of PhD students and graduate students.

2. General description and evaluation of the applicant's activities

- Teaching and expert activity

Assoc. Prof. R. Karalilova has more than 11 years of teaching experience at the Medical University - Plovdiv and more than 18 years of clinical experience as a resident physician at Kaspela University Hospital. The average teaching load for the last 3 years is 582 hours of curricular and 500 hours of extra-curricular employment. Teaching work includes lectures and practical exercises in Bulgarian and English on propaedeutics of internal medicine, rheumatology and internal medicine for students of the following specialties: medicine, dentistry, nursing, midwifery and physician assistants. She is also involved in teaching visiting Erasmus students.

She is a member of the State Examination Committee in Rheumatology at the Ministry of Health.

The extensive and productive activity of Assoc. Prof. Karalilova as a scientific supervisor. Under her supervision two PhD students have defended their PhDs and five more are developing their dissertations. All PhD theses are in the field of her scientific search in the most clinically relevant rheumatological diseases with an emphasis on the search for new diagnostic markers and approaches. In addition to PhD students, she supervises postgraduate students in rheumatology.

The candidate has significant teaching experience and has participated as co-author of a chapter in a textbook on propaedeutics of internal medicine in English and Bulgarian.

- Scientific and applied activities

Despite the well-defined scientific profile of the candidate as an expert in the field of systemic sclerosis, she has extensively studied other systemic connective tissue diseases; rheumatoid arthritis, spondyloarthritis and other inflammatory joint diseases; systemic vasculitis; osteoarthritis. Her skillful combination of expertise in ultrasonography and the search for new biomarkers in rheumatology is very impressive.

Assoc. Prof. Karalilova participates in the competition with 28 publications after obtaining the academic position of Associate Professor, 20 of them are with impact factor. An important achievement is the independent monograph "Ultrasonographic Phenotypes in Osteoarthritis" published in 2024, which summarizes the author's long experience in ultrasonographic diagnosis of osteoarthritis. It is not only a scientific but also a practical tool for the benefit of professionals from various disciplines providing health care to these patients. In addition to the monograph with the value of a habilitation thesis, 15 publications equivalent to a monograph are presented. Ten of them have been printed in journals refereed in Scopus and Web of Science, and 5 have an impact factor.

The scientific activity of Assoc. Prof. Karalilova's research activity is focused on several thematic areas, in which she works in a team of members of the department and scientists from other units. The main topic, which started with the doctoral studies and continues successfully until now, is related to the application of ultrasonography as a reliable diagnostic method in a number of diseases, among which the leading place is occupied by systemic sclerosis. A significant contribution of a scientific and applied nature is the new ultrasonographic score (US10SSc score) developed for the evaluation of joint and tendon manifestations in patients with systemic sclerosis, as well as the defined standards for normal skin thickness and echogenicity of the Bulgarian population. Assoc. Prof. Karalilova is expanding her research, based on her expertise in ultrasonography, into other pathology. Observations on the

sonographic differentiation between rheumatoid from psoriatic arthritis and studies in carpal tunnel syndrome have been contributory. The established criterion values of intima-media thickness in patients with polymyalgia rheumatica in the Bulgarian population are also important for clinical practice. With her scientific publications and high qualification in the field of ultrasonographic diagnostics R. Karalilova has established herself as a leading specialist at the national level, where it is no accident that she was elected President of BAMSU.

Biomarkers are another area that the candidate is developing in multiple studies on different molecules and pathologies. In systemic sclerosis, IL-6, YKL-40, TGF- β 1, ICAM-1, CXCL-4, IL-12p40, TNF-alpha, IL-17A have been studied to evaluate the inflammatory process. There was a positive correlation between IL-6, YKL-40, ICAM-1, CXCL-4, IL-12p40 and the negative course and adverse evolution of the disease due to their association with lung and joint involvement. The expression levels of miRNAs were examined to evaluate their involvement in the regulation of YKL-40 expression in the same pathology and a novel epigenetic regulatory axis MALAT1/miR-30e/YKL-40 was demonstrated. The diagnostic and prognostic role of serum IL-6 levels and carotid ultrasonography in the detection of subclinical atherosclerosis in patients with rheumatoid arthritis and ANCA-associated vasculitis was evaluated.

For the first time in the country, an elastographic evaluation of the skin in healthy individuals was performed and criterial values for the Bulgarian population were derived. The diagnostic possibilities of elastographic changes of the skin, spleen and salivary glands in systemic sclerosis were evaluated.

Innovative potential and interesting scientific-applied orientation have also the contributions related to the study of mitochondrial function and activity in patients with rheumatoid polyarthritis by the evaluation of cell metabolism. Studies of the pathobiochemical mechanisms related to iron homeostasis and inflammatory activity in patients with rheumatoid arthritis and diabetes mellitus

have a similar focus. The candidate is extending her research into analyzing the oral microbiome - periodontitis - rheumatoid arthritis relationship.

Again, with a focus on socially relevant diseases in rheumatology, there are also studies on different drug regimens in patients with osteoarthritis of the knee joint and the therapeutic possibilities of platelet rich plasma in this localization. The hepatotoxicity of baseline medications in rheumatology and the effectiveness of antimalarials in patients with osteoarthritis of the hand are also analyzed.

The active publication activity of Assoc. Prof. Karalilova has as a result 45 documents in Scopus and 183 independent citations with excluded self-citations and H-index 9. These indicators are strong scientific metrics that define her as a scientist of proven authority.

Her research has been reported to the scientific community at more than 100 scientific congresses and conferences. She presented joint research with students, PhD students and residents at 69 events. Thirty presentations of which 16 international contribute to her activity after getting the Associate Professor position.

The number of international studies in which R. Karalilova has participated is impressive - 7, concerning different diseases, therapeutic and diagnostic approaches.

Assoc. Prof. Karalilova is co-leader of the working group "Phenotypes, patient stratification and comorbidity in osteoarthritis" in European COST Action CA 21110 "Building an open European network on osteoarthritis research (NetwOArk)". As a participant in this action, I have directly witnessed her dedication and precision in the execution of project tasks.

In conclusion, the research activities of Assoc. Prof. Karalilova cover almost the entire spectrum of pathology in rheumatology. They are well focused and result-oriented. During these studies, the candidate has proven that she can work in a team, supervise collaborators and successfully implement projects.

3. Evaluation of the personal contribution and personal qualities of the candidate

I know Assoc. Prof. Dr. Rositsa Karalilova as a young assistant professor and researcher, who quickly overcame the steps of academic development, defending in a short time two dissertations with subsequent habilitation as associate professor. She is an invariable and valuable participant in the joint research projects of the Department of Propaedeutics of Internal Diseases and the Department of Medical Biology. During our many years of research, she has proven to be an organized, responsible and expeditious researcher. Her clinical assessment and interpretation of the data obtained undoubtedly contribute to the good publication record of the team. Over the years, she has proven to be an excellently trained, hard-working, ethical and collaborative colleague who can always be relied upon.

The analysis of the documents submitted for the competition and my long personal impressions show that R. Karalilova is not only a professional in the field of rheumatology and ultrasonography, but also a demanding and dedicated teacher and researcher. She has considerable experience in scientific supervision of PhD students, in teaching work and in project activities.

Analyzing the presented scientific production and comparing it with the scientific criteria set in the Regulations of MU-Plovdiv, the following data emerge:

Indicators	Minimal requirements	Assoc. Prof. Karalilova
A -1	50	50
Б - 2	-	100
В – 3 or 4	100	100
Г - 5 to 10	250	257.49
Д - 11	300	394.29
Е – from 12 till 22	140	3722.96
Ж	400	1116
Total	1240	5740.74

CONCLUSION

The documents and materials submitted by Assoc. Prof. Rositsa Valerieva Karalilova, MD, PhD, DSc meet all the requirements of the Academic Staff Development Act in the Republic of Bulgaria (ASDA), the Implementing Regulations of ASDA and the Regulations of MU-Plovdiv.

Her research activity significantly exceeds the minimum national requirements for holding the academic position of Professor.

The candidate has submitted enough scientific papers published in reputable international journals. They contain original scientific and applied contributions which have been cited many times.

She is an established physician and an accomplished scientist who successfully combines clinical experience and methodological knowledge with original scientific ideas. She can supervise projects, PhD students and postgraduate students with impressive organization and discipline.

After reading the materials and scientific works submitted in the competition, analysing their significance and scientific and applied contributions contained in them, I give my positive assessment and recommend the Scientific Jury to award to Assoc. Prof. Rositsa Valerieva Karalilova, MD, PhD, DSc, the academic position of "Professor" in Professional Field 7.1. Medical sciences, scientific specialty "Rheumatology", at the Department of Propaedeutics of Internal Diseases of Medical University of Plovdiv.

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



July 28th, 2024

Professor Victoria Sarafian, MD, PhD, DMSc