

## REVIEW

**by Prof. Dr. Dora Konstantinova Zlatareva, PhD**

**Head of the Department of Imaging,**

**Medical Faculty, Medical University of Sofia**

**External member of the Scientific Jury,**

**determined by Order № P-109-514/30.11.2023**

**of the Rector of MU Varna**

In the procedure for filling the academic position "Professor" in the field of higher education 7. Health and Sport, professional field 7.1. Medical Sciences, scientific specialty " Diagnostic Imaging" for the needs of the Board "Magnetic Resonance Tomography" of the Department "Diagnostic Imaging and Interventional Radiology" of the Medical Faculty at MU, Varna, announced in the State Gazette - issue 83 of 03.10.2023 and on the website of the Medical University - Varna.

One candidate participated in the competition: Radoslav Yosifov Georgiev MD, PhD - Associate Professor of Diagnostic Imaging at the Department of Diagnostic Imaging at the Medical University of Varna.

### **I. General presentation of the procedure and the applicant**

The set of materials submitted by the candidate on electronic media is in compliance with the Law on the Academic Degrees and Academic Positions of the Medical University of Varna, its Implementing Regulations and the requirements of the Regulations on the Conditions and Procedures for the Acquisition of Academic Degrees and Academic Positions of the Medical University of Varna and includes the required documents. The candidate describes in detail and

logically the contributions of the scientific works, presents the habilitation thesis and the data on the scientific metrics of the minimum national requirements for the respective position.

### **Biographical data and career development**

Assoc. Prof. Dr. Radoslav Georgiev was born on 07.04.1976 in Dobrich. He graduated from the English Language High School "Geo Milev" in 1995. He received his higher education at the Medical University of Sofia, graduating in 2001. In the period 2002-2003 he worked as a clinical resident and specialist in diagnostic imaging at the hospital in Dobrich. From 2003 to 2020 he worked at the University Hospital "St. Marina" EAD in Varna as a radiologist and diagnostic imaging specialist. Assoc. Prof. Dr. Georgiev acquired his specialty in Diagnostic Imaging in 2008. In 2012-2015 he was a PhD student at the Department of Diagnostic Imaging, Medical University - Varna and in 2015 he was awarded the educational and scientific degree "Doctor of Medicine" in the scientific specialty "Diagnostic Imaging" after successful defense of his thesis "Magnetic resonance diffusion and perfusion for differentiation and evaluation of primary glial brain tumors".

Since 2011 he has a European Diploma in Neuroradiology from the European Board of Neuroradiology. From 2020 to 2023 he was the Head of the Clinic of Diagnostic Imaging at the University Hospital "St. Marina" EAD in Varna.

The candidate started his academic career in 2003 and successively held the positions of Assistant Professor, Senior Assistant Professor (2011 - 2016) and Associate Professor (since 2016) at the Department of Diagnostic Imaging, Interventional Radiology and Radiotherapy at the Medical Faculty of Medical University "Prof. Dr. Paraskev Stoyanov", Varna.

The candidate is fluent in English, German and Russian.

He is a member of various professional organizations: the Bulgarian Association of Radiology (BAR), the European Society of Radiology (ESR), the European Society of Neuroradiology (ESNR). Assoc. Prof. Georgiev has participated in the preparation of the congresses of the Bulgarian Association of Radiology (BAR) 2017, 2022, as a member of the scientific committee, and in 2019 as Chairman of the local committee. He was elected as the President of the

upcoming XX Congress of the Bulgarian Association of Radiology. The candidate was a National delegate of the Bulgarian Association of Radiology (BAR) at the European Congress of Radiology ECR 2019 and 2020. He is improving his professional qualification through numerous courses and international specializations. Assoc. Prof. Georgiev actively participates in national and international courses, congresses and conferences presenting the results of his research.

## **II. Evaluation of the quantitative and qualitative indicators of the scientific research and applied activities**

The number and type of publications submitted for peer review meet the requirements of the MU Varna regulations for holding the title "PROFESSOR". One dissertation with an abstract is submitted. The total number of scientific works is 143, 53 of them are after holding the academic position of "Associate Professor": respectively: fully published - 44, of which 11 articles equivalent to a habilitation thesis and 3 of the published articles (indicator Г7) are published in journals refereed and indexed in world-renowned databases of scientific information, 29 publications and reports are in non-refereed journals and collections with scientific peer review, nine are scientific presentations at national and international scientific forums. The scientific production of Assoc. Georgiev has 7 citations in international scientific publications.

Scientific metrics in Annex 3

Metrics	points
A	50
Б	
В	122,91
Г	350,40
Д	105
Е	180

Assoc. Prof. Dr. Radoslav Georgiev fully meets and exceeds the minimum national requirements and the minimum requirements of the MF, MU - Varna for the academic position "Professor" in the group of indicators - A, B, Γ, Δ, concerning the scientific publication activity and citations of his publications in refereed scientific journals in world-renowned databases and in non-refereed journals.

The attached reference shows that the candidate exceeds the minimum national requirements for the academic position of Professor in terms of the indicators of Group E, including participation in research projects, training of postgraduate students and participation in monographs and scientific manuals.

The applicant has participated in 2 national research projects as an expert.

Two PhD students under his supervision have successfully defended their PhD.

The research activity of Assoc. Prof. Georgiev is in several areas of imaging diagnostics. The most significant number are the studies in the field of **neuroradiology**, which are the subject of the dissertation. The candidate submitted for review articles on the role of magnetic resonance imaging in the evaluation of tumors after radiotherapy, emphasizing the role of MR perfusion and diffusion in the follow-up of patients.

Some of the publications focus on the role of contrast-enhanced MRI of the head and neck in the detection of leptomeningeal metastases, others consider the glymphatic system as a possible route of metastasis. Assoc. Prof. Georgiev describes the relationship between genetic factors, pathological findings and MR findings according to the WHO 2021 classification of brain tumors.

The role of MR in the differential diagnosis of demyelinating diseases, monitoring of therapeutic effect and detection of activity is also described.

Some publications are devoted to ASL perfusion for the evaluation of arterio-venous malformations and of asymptomatic cerebrovascular disorders and microangiopathy and Alzheimer's disease.

The second area of scientific interests of Assoc. Prof. Georgiev is **diagnostic imaging of the head and neck**. The role of MR in the diagnosis and staging of malignant neoplasms in this area

has been confirmed; rare diseases and syndromes with characteristic MR findings have been described; potential complications after nasopharyngeal swabbing have been described.

**Musculoskeletal imaging, oncology, cardiology and gastroenterology** are other areas of scientific interest of Assoc. Georgiev and publications confirm the role of imaging diagnostics.

### **III. Evaluation of the habilitation thesis**

Assoc. Prof. Georgiev presents 11 scientific publications in the field of imaging diagnostics. They are in the following scientific fields:

1. **Neuroradiology** - Some of the publications are in the field of neuro-oncology. Assoc. Prof. Georgiev and scientific team describe the imaging characteristics of gliomas and in particular glioblastomas according to the WHO classification of 2021 and find a relationship between genetic, pathological data and MR findings. The applicant has presented a hypothesis on the role of certain genes in gliomagenesis and their predictive value regarding therapeutic response.

The rare localization of DNETs and the role of the glymphatic system as a potential pathway for tumor dissemination in glioblastoma have been described. A separate publication is devoted to IDH wild type glioblastoma as 2 cases are reviewed.

State-of-the-art software was used by Assoc. Prof. Georgiev for volumetric assessment of brain parenchyma in patients with multiple sclerosis.

2. **Head and neck imaging** - The candidate presents a case of "empty nose" syndrome.

3. **Gastroenterology** - Assoc. Prof. Georgiev confirms the role of magnetic resonance cholangiopancreatography in the diagnosis of liver abscesses and the demonstration of a possible relationship between abscesses and the biliary tree, as well as the detection of important concomitant pathology in this area.

4. **Musculoskeletal Imaging** - A contribution of national significance is the application of artificial intelligence in diagnostic imaging to investigate the level of agreement between magnetic resonance imaging descriptions of the lumbar spine created by a deep learning neural

network (CoLumbo) and radiologists' readings. The study found that application by a radiologist of relevant artificial intelligence-based software would result in reduced reading times, timely and effective surgical treatment, and improved quality of life for patients with spinal stenosis.

#### **IV. Reflection (citation) of the candidate's publications in national and foreign literature (publication image)**

The scientific works of Assoc. Prof. Georgiev have been cited 7 times in international scientific publications, which is an indicator of the international recognition of the candidate's scientific achievements.

#### **IV. Complex, qualitative evaluation of the teaching and learning activities. incl. scientific guidance of students, PhD students, postgraduate students**

The teaching activity of Assoc. Prof. Georgiev started in June 2003 as an assistant professor of imaging diagnostics in the Department of Diagnostic Imaging, Interventional Radiology and Radiotherapy at the Medical Faculty of Medical University "Prof. Dr. Paraskev Stoyanov", Varna. The candidate teaches through lectures and practical exercises both in Bulgarian and English students from the specialties of Nurse, Kinesiotherapist, Technician and Rehabilitator. In the period 2011 - 2016 she was a senior assistant Professor and since 2016 he has been an Associate Professor in the same Department. Assoc. Prof. Dr. Georgiev participates with lectures in the main courses for imaging diagnostics of MU-Varna and MU-Sofia.

The report on the teaching and teaching workload of Assoc. Prof. Georgiev establishes that it corresponds to the requirements for holding the academic position "Professor". The candidate has participated in 2 national scientific and educational projects. He has supervised the specialization of 7 colleagues at the Clinic of Diagnostic Imaging at the University Hospital "St. Marina" EAD, Varna. Participates in the Examination Committee for the State Examination in the specialty "Diagnostic Imaging" from 2020. Assoc. Prof. Dr. Georgiev fully meets the minimum national requirements for the academic position of "Professor" and exceeds them in the group of indicators - B, Г, Д and E. It is evident from the attached reference that the candidate

fully meets the minimum national requirements for the academic position of Professor in terms of the total number of published scientific papers in all groups of indicators.

The above facts confirm the significant teaching and methodological activity of Assoc. Prof. Georgiev, as well as his professionalism and pedagogical skills.

**V. Overall assessment of the candidate's compliance with the mandatory conditions and the mandatory quantitative criteria and scientific metrics according to the Regulations for Academic Positions at MU- Varna**

The analysis of the enclosed materials and references for the competition for the academic position "Professor" in the scientific specialty "Imaging Diagnostics" for the needs of MU - Varna, Department of Imaging Diagnostics and Interventional Radiology, shows that the only candidate - Assoc. Radoslav Georgiev, MD, PhD, meets the requirements of the Law on Research and Development of Imaging and Radiology - Regulation for the Academic Position "Professor" at MU Varna, by meeting and exceeding the quantitative scientific metrics, according to the approved regulations and criteria. The candidate has successfully defended one dissertation thesis, and has respectively acquired the educational and scientific degree "Doctor", and has held for more than 7 years the academic position of "Associate Professor" in the scientific specialty of Diagnostic Imaging at the Department of Diagnostic Imaging and Interventional Radiology at the Medical Faculty of Medical University of Varna. Presents quality scientific production: 143 scientific papers, 53 of them are after holding the academic position of "Associate Professor": respectively: full-text - 44, of them 11 articles equivalent to habilitation thesis and 3 of the articles (indicator Г7) are published in refereed journals and indexed in world-known databases of scientific information, 29 publications and reports are in non-refereed journals and collections with scientific peer review. 9 are scientific presentations at national and international scientific forums. The scientific production of Assoc. Prof. Georgiev has 7 citations in international scientific publications.

Assoc. Prof. Georgiev shows a significant teaching and learning activity and serious pedagogical skills: lectures and practical exercises for students of the Faculty of Medicine of the specialties Nurse, Kinesitherapist, X-ray Technician and Rehabilitator in Diagnostic Imaging in

Bulgarian and English. Participates as a lecturer in the basic course for the specialty of imaging diagnostics at MU-Varna and MU-Sofia.

The candidate meets and exceeds the minimum national requirements for the academic position of Professor. The evidence presented for the academic position of Professor does not repeat that for the academic position of Associate Professor.

## **VI. Conclusion**

Assoc. Prof. Dr. Radoslav Yosifov Georgiev, PhD, meets the mandatory and specific conditions and scientific-metric criteria set out in regulatory requirements of the Academic Staff Development Act (ASDA) in the Republic of Bulgaria, Regulations for implementation of ASDA and Regulations of Medical University Varna for holding the academic position "Professor". The overall scientific production of the candidate has an original scientific-theoretical and applied-practical significance. Assoc. Prof. Georgiev possesses the authority of an established professional, scientist and lecturer. He was the first awarded a European diploma in neuroradiology and is among the leading specialists in Bulgaria.

**Based on the above, my review is entirely positive and I confidently propose the esteemed members of the Scientific Jury to vote positively for the election of Assoc. Prof. Radoslav Yosifov Georgiev, MD, PhD, for the position of AD "Professor" in the scientific specialty "Diagnostic Imaging" in the professional field 7.1 Medicine at the Department of Diagnostic Imaging and Interventional Radiology of the Faculty of Medicine, Medical University - Varna.**

Заличено на основание чл. 5,  
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Sofia

**Prof. Dora Konstantinova Zlatareva, MD, PhD**