

REVIEW

in reference to competition for the academic position of "Professor" in higher education area 7. "Health and Sports"; professional field 7.1. "Medicine"; scientific specialty "Imaging Diagnostics" - for the needs of Clinic of Imaging Diagnostics at the UMBALSM "N. I. Pirogov" EAD, as announced in State Gazette, issue 19 / 05.03.2021

by

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Appointed reviewer and external member of the Scientific Jury by order No.

RD-26-1165 / 05.05.2021 of the Executive Director of UGHATEM "N. I. Pirogov"

General. The competition for the academic position of "Professor" has been announced in SG iss.no. 19/05.03.2021 in professional field 7.1. "Medicine", scientific specialty "Radiology" for the needs of the Clinic of Imaging Diagnostics at the University Hospital "N. I. Pirogov ". Documents were submitted in time by one candidate - Assoc. Prof. Dr. Kamelia Zaharieva Genova, MD. - full-time Associate Professor at UMBALSM "N. I. Pirogov ".

There are no violations of the competition procedure.

Biography and career development. Assoc. Prof. Dr. Kamelia Zaharieva Genova, Ph.D. was born on July 18, 1966 in the city of Montana. She graduated as M.D. in 1991 at the Medical University - Sofia. She started working as an intern in Imaging Diagnostics at First General Hospital - Sofia (1992 - 1995) and successfully passed the exam for acquiring specialty in Imaging Diagnostics in 1995. During the period 1999 - 2011 she worked consecutively as a specialist at the Oncology Center in Sofia, also for a short time - in two Clinics (Augsburg and Nuremberg) in Germany and then - in

two Medical Centers for Diagnostic Imaging (MHAT-NKB EOOD and M-TECH EOOD "NI Pirogov").

Her academic career began in 2014 as an Assistant in Diagnostic Imaging at MBAL - NKB EOD (2014-2015). Since 2015 she has been an Associate Professor at MBAL-NKB EOOD Sofia, and since 2019 - an Associate Professor at the Department of Imaging Diagnostics at UMBALSM "N. I. Pirogov". Dr. Genova obtained her educational and scientific PhD degree in 2015. She has an additional professional qualification in marketing, advertising and business communications.

Assoc. Prof. Kamelia Genova has administrative experience as Head of the Department of Imaging Diagnostics (2010-2019) and Medical Manager of SMDLOD "N. I. Pirogov" since 2019. She was a member of the Ethics Committee of MBAL - NKB EOD. Her medical work is entirely in the field of imaging diagnostics. Her total work experience as of the date of the competition amounts to a total of **23** years, of which she has been a practicing university lecturer and imaging specialist for over **7** years. She has a certificate of professional qualification in the highly specialized activity "Interventional Radiology" - 2nd level.

Assoc. Prof. Kamelia Genova is fluent in English and German, has working level of Italian and Russian, as well as computer skills. Her additional postgraduate qualifications include specialized training courses in the field of imaging in London (England), Athens (Greece), Budapest (Hungary), Rome (Italy), Hamburg (Germany) and Basel (Switzerland), during which she mastered new research methods that she implemented consequently in Bulgaria.

Publishing activity. Assoc. Prof. Kamelia Genova, MD, **PhD** participates in the current competition with a total of **155** scientific papers, of which **99** are published scientific articles and abstracts from scientific forums and **56** - lectures and plenary reports that have been subsequently published.

The current competition body of peer reviewed works includes **93** scientific papers dated after her habilitation as an Associate Professor - **41** publications and **15** scientific abstracts published as of **4** national and **11** international scientific forums. The publications include **1** own abstract, **1** independent monograph, **9** participations in collective monographs and textbooks, **30** scientific articles in peer-reviewed publishers(4 of which are **in**

foreign Journals). She is the sole or first author of **20** (51.3%) of the publications. For the purposes of the competition we have a list of **37** lectures and plenary reports presented at national forums, with published titles.

According to an official report from the University Hospital "N. I. Pirogov" about scientometric indicators, Assoc. Prof. Genova exceeds the minimum requirements of NACID. She has a total of **1617.84** points, of which **947.84** points are generated from publications in refereed or non-refereed journals (group D) and **220** points - from citations in group **E**.

Scientific programs and international studies. Assoc. Prof. Kamelia Genova is leading a national research project dedicated to raising awareness about Fabry disease among imaging specialists. She has participated as a contractor in one national (for electronic register of patients with transthyretin amyloid cardiomyopathy) and in four international research projects, one of which is dedicated to the application of CT in patients with Covid-19 pneumonia.

Scientific awards. Assoc. Prof. Kamelia Genova is the winner of two first prizes for "Best Poster" co-authored with young scientists awarded at the World Forum on Neurosonology (2013) and the First National Congress of Neurosonology and Cerebral Hemodynamics with international participation (2015).

Scientific citations. Data from the Central Medical Library of Medical University - Sofia, shows that **29** citations of Assoc. Prof. Genova's publications were found: **18** of them in Bulgarian sources, **10** - in the international databases as Web of Knowledge and Scopus and **1** - in other databases. Self-quotes are not included in this reference.

Impact factor. The total impact factor of the published works (articles and abstracts) of Assoc. Prof. Genova is **3,782**.

Scientific contributions. The main scientific and applied contributions of Assoc. Prof. Kamelia Genova, Ph.D. are in different areas of diagnostic imaging. She has original scientific and theoretical contribution **of** the application of MRI in cardiac diseases. In her work she evaluates the morphology and function of the right heart in patients with congenital heart disease and cardiomyopathies and proves a significant relationship between age and late outcomes after radical correction of Fallot tetralogy, as well as

between hemodynamic parameters and the development of myocardial fibrosis [1, 4-7, 24, 41, 45, 70, 74, 81]. She has participated in the implementation of cardio-magnetic resonance diagnostics in Bulgaria [8-12,43] and published the first monograph in our country in this area [5].

Assoc. Prof. Genova has contributed significantly in the scientific and applied development of new non-invasive imaging methods in **Bulgaria** - multidetector computed tomography and functional MRI [8, 19, 22, 42, 71, 72]. She has created new protocols for morphological diagnosis of atherosclerotic plaques based on correlative imaging and pathohistological results [14, 25, 28, 30, 81]. She has authored 9 (8 independent and 1 co-authored) chapters in various textbooks and monographs on imaging diagnostics [15-23].

In the field of Neuroradiology, she describes the diagnostic value of various imaging methods in some rare syndromes and diseases - basilar artery fenestration, Charles Bonnet syndrome, spinal epidural lipomatosis, callosum dysgenesis, Percheron infarction, brain death patients, Fabry disease, pericardial gossypiboma, etc. [29, 36, 38, 40, 53, 77, 65, 78, 84, 87, 95]. Dr. Genova has studied the applications of new MRI techniques (diffusion, diffuse tensor imaging, contrast and non-contrast perfusion and spectroscopy) in the diagnosis of brain tumors and tumor-like lesions [55]. She works in the field of planning and monitoring of the effect of interventional treatment of vascular diseases [39, 44, 51, 90].

Another area of her interest is the application of radiological methods in lung diseases - diffuse parenchymal diseases, pulmonary hypertension and pulmonary thromboembolism [2, 34, 37, 47, 56, 83]. She is among the pioneers in the study of lung and heart changes caused by the Covid-19 pandemic – and has developed a specialized protocol for CT assessment and standard description [54, 59, 61, 66-68]. She has described the first case in our country of Covid-19 examined by MRI of the lung [58] and made a proposal for introduction of the method in clinical practice.

In the field of **M**usculoskeletal **R**adiology, Assoc. Prof. Genova has translated into Bulgarian an English edition of illustrated notes on musculoskeletal magnetic resonance imaging [13]. This manual is used in our country as a practical guide for training various specialists in this field.

Assoc. Prof. Genova has a significant scientific and practical contribution to the development of **U**roradiology. In a comparative analysis

with other imaging methods, she studied the diagnostic value of MRI urography in renal disease and applied multiparametric MRI as a screening method to detect prostate cancer and determine the degree of invasion in bladder tumors [35, 66, 93, 94]. She has created and put into practice new diagnostic protocols that meet world standards.

One of her most important contributions are the studies of optimizing the radiation load in X-ray examinations of children [60, 86, 88, 89, 96, 99], for which in 2019 the department of image diagnostics headed by her at MBAL - NKB EOOD was IAEA certified. She developed a specialized protocol for reducing the radiation dose while maintaining high image quality with CT. She has participated in a research team to create the first 3-dimensional images of the heart in Bulgaria [96], which are implemented in pediatric cardiac surgery.

The overall work of Assoc. Prof. Genova shows consistency and systematic upgrading of research, scientifically applied and managerial experience in various fields of imaging. It demonstrated innovation and aspiration to implement in Bulgaria the latest diagnostic imaging methods of world-wide importance.

Teaching and training. The teaching activity of Assoc. Prof. Kamelia Genova started back in 2014 and continues until now. It includes practical seminars and lectures for medics specializing in imaging and cardiology, courses, lectures and practical classes for students in the Medical College "Yordanka Filaretova" at MU - Sofia, as well as postgraduate training of specialists in imaging. She is a member of a state examination commission at the same college.

For the purposes of the current competition, we have a summary of her teaching activity after her first habilitation, consisting of - the average annual classroom employment (lectures and exercises for students) is **175** teaching hours, and extracurricular activities (lectures, exercises, exams of specialists and doctors of individual training) - an average of **510** hours per year. As of the date of the competition, Assoc. Prof. Genova is the academic adviser of 2 independent doctoral candidates training in imaging diagnostics and 2 postgraduate candidates for acquiring the specialty "Imaging diagnostics".

Reviewing and Editorial Activity. Assoc. Prof. Genova has participated in 2 scientific Juries as a member. She has authored 2 reviews -

1 for a competition for scientific position and 1 - for obtaining a scientific degree.

Membership in National and International Scientific and Professional Organizations. Assoc. Prof. Kamelia Genova is a President of the Bulgarian Society of Cardio-Thoracic Radiology. She is a member of the Bulgarian Medical Union, the Union of Translators in Bulgaria and 3 European scientific organizations (European Association of Radiology - member of the Committee on Education, European Association of Cardioradiology and European Association of Magnetic Resonance Imaging in Medicine and Biology).

Personal Impressions. Assoc. Prof. Dr. Kamelia Zaharieva Genova, MD, Ph.D. is a person characterized by innovative spirit, high efficiency and a constant striving for scientific excellence. She has continuously shown creativity, responsibility and courage in pursuit of her scientific goals. She is an excellent team player and team leader. She enjoys high reputation among the radiological community at home and abroad and is a lecturer very much in demand. She has sufficient clinical, scientific, practical and administrative experience as a specialist in Imaging Diagnostics, Head of the Clinic and Medical Manager, participant in international studies and member of scientific national and international organizations, and that makes her a candidate for the competition position with a very high potential for highly successful performance.

Conclusion. As a candidate for the competition position, Assoc. Prof. Kamelia Zaharieva Genova, MD, PhD covers all criteria and indices for holding the academic position "Professor", defined in the Regulations for the development of the academic staff in UMBALSM "N.I. Pirogov" EAD. She has a degree in Imaging Diagnostics, has an educational and scientific degree "Doctor of Medicine", has many years of clinical, scientific and organizational experience as a specialist, academic lecturer, clinical researcher and head of highly specialized activities in medicine. She has a wide scientific and publishing activity at home and abroad and is a leading specialist in imaging in Bulgaria. Her body of work carries important personal contributions to the current scientific and applied developments in her area.

Hereby, I offer with full conviction, to the members of the Scientific Jury on the announced competition in SG no. 19/05.03.2021 to vote affirmatively for the candidacy of **Assoc. Prof. KAMELIYA ZAHARIEVA GENOVA, MD,**

PhD to take the academic position of "PROFESOR" in the professional field 7.1. "Medicine", scientific specialty "**Imaging Diagnostics**" for the needs of the Clinic of Imaging Diagnostics at UMBALSM "N. I. Pirogov" EAD - Sofia.

Sofia, June 10th, 2021.

REVIEWER:

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