

## ***SHORT REVIEW***

***Subject:*** Competition for the occupation of the academic position "professor" in the field of higher education 7. Health care and sports, professional direction 7.1. Medicine, scientific specialty "Human Anatomy, Histology and Embryology", announced at SU "St. Kliment Ohridski" in the State Gazette, issue 48/28.06.2022.

***By Assoc Prof. Dr. Yavor Georgiev Grigorov, PhD, Faculty of Medicine, SU "St. Kliment Ohridski", department of "Surgical Diseases, Obstetrics and Gynecology".***

### ***Information on the competition procedure***

The competition is for filling the academic position "professor" in professional direction 7.1. Medicine (Human Anatomy, Histology and Embryology) on a full-time position for the needs of the Department of Anatomy and Histology, Pathoanatomy and Forensic Medicine at the Faculty of Medicine of the University of St. Kliment Ohridski". The competition announcement was published in the Official Gazette, issue 48 of 06.28.2022. On the basis of Art. 119, para. 5 of the Regulations on the terms and conditions for acquiring scientific degrees and occupying academic positions at SU "St. Kliment Ohridski" (PURPNSZADSU) a procedure for admission to the competition was held and a scientific jury was appointed on the basis of Rector's orders RD-38-502/24.8.2022 and RD-38-499/24.8.2022. One candidate was allowed to participate in the competition – Assoc Prof. Ivan Ilkov Maslarski, Ph.D. The opinion was prepared in accordance with the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB) and the Regulations on the Terms and Procedures for Acquiring Scientific Degrees and Holding Academic Positions at SU "St. Kliment Ohridski". The regulatory requirements regarding the competition procedure have been complied with. The applicant's documents are in full compliance with the regulatory requirements for admission and participation in a competition for the academic position of "professor" at SU "St. Kliment Ohridski". The documents were transmitted electronically in sequence from #1 to #3, from #5 to #7 and from #10 to #18, including attached evidentiary material: Autobiography, Higher education diploma, Diploma for educational and scientific degree "doctor", Document for occupied academic position, Certificate of work experience in the specialty, Certificate and employment contract for the position held at the University, list of all the candidate's scientific works, List of scientific works with which the candidate participated in the competition, Scientific contributions generated by the "Authors"

system of SU "St. Kliment Ohridski", Table and evidentiary material of the minimum national requirements for the scientific and teaching activity of the candidate for the academic position "professor", Reference for citations with a full bibliographic description of the candidate's cited and citing publications used in the competition for "professor", Reference to the applicant's original scientific contributions, Reference to the candidate's academic workload in the last five years, as well as other indicators under Art. 112, para. 2 with the appropriate evidence, Full text of the scientific works that are used for the competition, Summaries of scientific works submitted for participation in the competition, Copy of the competition announcement in the State Gazette

A medical certificate for clinical and mental health, as well as a criminal record certificate, are not required, as Associate Professor Ivan Maslarski is currently on an open-ended employment contract at the University of St. Kliment Ohridski".

### ***Biographical data and academic development of the candidate***

Assoc Prof. Ivan Maslarski was born in 1980 in Sofia. Primary and secondary education, with intensive study of the English language, was completed in his hometown. He obtained his higher education and master's degree at the University of St. Kliment Ohridski", in 2002, majoring in "Biology and Chemistry". During his studies, he was a lecturer in anatomy and anthropology and participated in student projects. He defended a thesis in anthropology (dermatoglyphics) as well as in chemistry for a second master's degree. In 2002 - 2005, he was a full-time doctoral student in the biological education sector of the University of Sofia and in 2006 he defended an interdisciplinary dissertation devoted to the prevention of psychoactive addictions. In 2007, he won a competition for an assistant in "Anatomy, cytology and histology" at the Faculty of Medicine of the SU, and later held the position of "chief assistant". In 2012, he participated in an international scientific project in Germany. In 2014, Assoc Prof. Ivan Maslarski acquired a medical specialty in "Anatomy, cytology and histology". In 2016, he defended his dissertation on the interdisciplinary topic "Health education through the teaching of biology and anatomy". In the same year, he acquired the academic position "Associate Professor" in direction 7.1. Medicine (Human cytology, histology - general and special). Two years later, he was elected the head of the "Anatomy and Histology, Pathology and Forensic Medicine" department. Assoc Prof. Maslarski made a major contribution to the digitization of teaching microscope preparations, as well as the

implementation of an innovative method for online learning during the COVID isolation, which was reported at a conference and published in an international journal.

Assoc. Prof. Ivan Maslarski is the author and co-author of a total of 54 scientific works, in most of which he is the first or leading author. The total number of publications is 31, including 19 in refereed and 12 in non-refereed journals. Two of the works are textbooks for basic courses of study in higher schools, two monographs and 19 sectional reports and posters.

### ***Scientific research activity and scientometric data***

The scientific data of Assoc Prof. Ivan Maslarski are in accordance with the criteria and indicators recommended in the normative documents for evaluation by a Scientific Jury when conducting a competition for a "professor" under direction 7.1. Medicine (Human Anatomy, Histology and Embryology). 22 publications are presented, of which 13 in refereed and 9 in non-refereed journals, 1 monograph, 1 textbook and 11 papers from participation in plenary sessions, reports and posters, covering the minimum requirements in the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic Bulgaria, as follows:

Group A - Dissertation work "Health education through the teaching of biology and anatomy", defended in 2016.

Group B - Monographic work - "The twin method in medical research"., ISBN: 978-954-07-5372-0, "St. Kliment Ohridski" University Publishing House, Sofia, 2021.

Group D - Publications and reports in scientific publications - 22 (13 referenced and indexed in world-renowned databases of scientific information and 9 published in non-refereed peer-reviewed journals or published in edited collective volumes).

Group D - The total number of citations of the candidate is 31, of which 10 are in refereed journals (Web of Science or Scopus), 17 in non-refereed, 4 of them are cited in monographs and collective volumes. The h-index derived by google scholar is 3.

Group E – Assoc Prof. Ivan Maslarski has a recognized specialty in "Anatomy, histology and cytology". In three projects the candidate is a member of the scientific and research group, and in three projects he is the team leader.

### ***Scientific contributions.***

The contributions of Assoc Prof. Ivan Maslarski are presented in detail in the attached "Author's reference for the contribution nature of the scientific works". They are divided into groups as follows:

1. Contributions related to twin studies. In this group of publications, the monographic work "The Twin Method in Medical Research", numerous reports, announcements and posters were formed. A practical biometric model for zygoty determination has been created that can be implemented in medical research and used as an additional means of validating twin type in combination with blood group analysis. A profile of the monozygotic and dizygotic twins was created according to dermatoglyphic and biometric indicators. Highlighting the typical marks for both groups. A large database of dermatoglyphic and biometric data from own research, as well as analysis of available twin registries, was analyzed. Presented systematization and comparison of the significance of genetic and epigenetic factors on the epidemiology of a number of diseases, as well as implementation of a model for twin registries.

2. Contributions related to 3D imaging and virtual reality in medicine. This group of publications highlights an experimented and implemented sparing method for preparing the suboccipital fossa, using detailed layer-by-layer fascial sections and demonstrating a donor artery with preserved neuromuscular structures along its course. Detailed tracing of the course of difficult-to-access arteries and contribution to the wider use of layered surgical access in this anatomical region in neurovascular surgery. Multifaceted use of the created moist preparations and respectively virtual models created on them. Creating a fluid 3D heart and aortic arch model with aneurysm from real patient data. In this way, not only the damaged vascular structure is investigated in real size, but also the test and demonstration of the vortices in the vascularly compromised aorta. Demonstration of 3D images of variations of v. saphena magna et parva with demonstration of venous stasis. An innovative form for training and use in clinical practice of printed anatomical models with biocompatible substrates.

3. Contributions related to breast cancer – Assoc Prof. Maslarski together with colleagues from the Varna University of Medical Sciences conduct dermatoglyphic and etiological studies related to breast cancer. Findings revealed statistically significant differences between women with breast cancer and healthy women in terms of mean values of papillary images of the five homologous fingers, as well as in terms of total digital ridge count. The fluctuating asymmetry

of the dermatoglyphic images of the total digital ridge number of the fourth fingers and the palmar ridge number of b-c III IP occupies a suitable place in the prognosis of BC. An original dermatoglyphic algorithm was proposed, which is already applied in oncological prophylactic practice in our country.

4. Contributions related to anatomical variations. A number of variations with clinical significance have been described, such as: variation of the brachial plexus and structures relevant to upper extremity reconstruction surgery, as well as compressions and subsequent pain and trauma in the muscle area or sensitivity in the sensory innervation of the skin in the shoulder area from the lateral part (variant of n.musculocutaneus). A number of vascular variations have been described and analyzed, such as a. brachialis, a. obturatoria, arcus palmaris superficialis, a. hepatica propria, which have an unusual origin, course or anastomoses and are used in surgical practice. A rare variation (less than 10 percent) of an additional lobe present or a lobe different from the macroscopic taxonomy of the liver is also described and discussed.

5. Contributions related to epidemiological studies. Among these studies, emphasis has been placed on the relationships between genetic factors and environmental factors involved in the occurrence and prognosis of breast cancer. Some results from twin cohort studies conducted in Scandinavian and Northern European countries in monozygotic and dizygotic twins with breast cancer are reported, analyzed and modeled. A comparison is also made with the author's proposed biomarker model for early diagnosis of breast cancer.

6. Contributions related to ossification and variations in the skull with clinical relevance. In this group, Assoc Prof. Ivan Maslarski analyzes the emissary openings in the skull and respectively the emissary veins and describes their variants, in which there are extensions and an atypical anatomical arrangement. It has been proposed that these anatomical features are due to a pathology requiring their development in order to regulate intracranial pressure. Research in this group contributes to imaging before surgical interventions. According to the research of the author's team, the emissary veins and their openings can also be considered as a possibility for their appearance, as a result of existing varicose disease and caused by arterio-venous fistulas and the pathology associated with it. In this group, varieties of the cranial bones and their connecting sutures in newborns and expression of their importance for the normal development

of the CNS are also considered. The described options can be useful for neurosurgical and trauma practice.

7. Contributions related to educational anatomical innovations. In this group of publications, the author offers a global approach to neuroanatomy and its correct placement in the anatomy curriculum. Alternatives to dissections, prosections, plastination, microscopy are demonstrated, and videos are considered as potential forms of organization in the learning process. Regarding dissections, the problem of acquiring practical skills in an environment of social distancing and successfully passing colloquiums and exams is also discussed.

8. Contributions related to Glomus coccygeum in the pilonidal sinus and sensory receptors overview. Glomus coccygeum (GC) specimens from pilonidal sinus excision detected and reported. Positive expression of GC cells for SOX10 was demonstrated, which was used for the first time. It has been suggested that GC cells probably originate in the neural crest from multipotent Schwann cell precursors.

The comparative analysis of the minimum national requirements under Art. 2b of ZRASRB for scientific field 7. Health care and sports, professional direction 7.1. Medicine with the attached reference for the real points of Associate Professor Ivan Maslarski shows that the candidate meets the minimum national requirements for occupying the academic position of "professor". The detailed analysis of the relevant groups of indicators A/A, B/B, C/C, D/D, D/E, E/F proves the following: Indicators A (50), B (0) and C (100) correspond of national requirements. Indicator D is 504 (378 plus 126) with a minimum value of 200; indicator D is 275 with a minimum value of 100; The candidate's indicator E is 175, with minimum national requirements 100. The total number of points of Associate Professor Maslarski is 1104, with the minimum number as a national requirement for the academic position "professor" - 550. By group of indicators - D, D, E, the values of Assoc Prof. Maslarski exceed the minimum national requirements.

### ***Teaching activity***

Assoc Prof. Ivan Maslarski has been a teacher at the Ministry of Education since his reinstatement in the ranks of the "St. Kliment Ohridski" in 2007. Passes through all levels from assistant to associate professor and leads the lecture course of basic disciplines, such as "General Cytology, Histology and Embryology" to Bulgarian and English-speaking medical students;

"Human anatomy" of Bulgarian and foreign medical students, as well as nurses; "Anatomy and biomechanics" of occupational therapy and medical rehabilitation specialty; "Anatomy, Physiology and Hygiene" of students from the Faculty of Pedagogy of the SU, majoring in social activities. The report presented shows that in the last five years, Assoc Prof. Ivan Maslarski spent a total of 6,502 hours, of which about 5,460 hours were in the classroom, according to the standard for his position - 360 hours per year.

### ***Conclusion***

Associate Prof. Ivan Maslarski, participating in the competition for the academic position of "professor", fully meets the regulatory requirements of the RASRB and the Regulations for the terms and conditions for acquiring scientific degrees and holding academic positions at SU "St. Kliment Ohridski". He is a highly qualified and erudite specialist with significant scientific creativity and original contributions, as well as an outstanding contribution to the development of the department he heads. The scientometric data of Assoc Prof. Ivan Maslarski are not only in accordance with, but also exceed the minimum national requirements, normative criteria and indicators for evaluating candidates when conducting a competition for the academic position of "professor".

***This complex evaluation of his documents and activities provides solid grounds to confidently give my positive assessment and recommend to the Scientific Jury to prepare a report-proposal to the Faculty Council of the Faculty of Medicine at Sofia University „St. Kliment Ohridski” for awarding the academic position „Professor”, in professional field 7.1. Medicine (Anatomy, histology and embryology) of Assoc. Prof. Ivan Ilkov Maslarski.***

Date 25.09.2022

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Sofia