ACADEMIC ASSESSMENT
for the needs of procedure for holding the academic of "Associate Professor" in the scientific specialty of Anatomy, Histology and Cytology, Higher Education Area 7. Health and Sport, PF 7.1. Medicine, declared for the needs of teaching of the Department of Anatomy and Cell Biology, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna **in SG No 45 of 28 May 2024.**
Applicant name: **Desislava Marinova Marinova, MD, PhD**

Author of the assessment: **Associate Professor Stoyan Pavlov Pavlov, MD, PhD**
Scientific specialty: "Anatomy, histology and cytology",
HE area "7. Health and Sport', PD "7.1. Medicine"
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*The assessment is drawn up in accordance with the requirements of the LfDoASiRB and Chapter 3. Section III of the RfALfDoASiRB – Conditions and procedure for holding the academic position of associate professor and Chapter 3. Section III of the Rules for the Development of Academic Staff at the Medical University 'Prof. Dr. P. Stoyanov' – Varna – Conditions and procedure for holding the academic position of Associate Professor.*

# *ACADEMIC ASSESSMENT*

**by Prof. Stoyan Pavlov Pavlov, MD, PhD,**
Associate Professor at the Department of Anatomy and Cell Biology,
Medical University "Prof. Dr. Paraskev Stoyanov" – Varna,
member of the scientific jury appointed by an order of the Rector of the
Medical University "Prof. Dr. Paraskev Stoyanov" - Varna,
**No P-109-224 / 26 July 2024**

**Subject:** Procedure for holding the academic position of "Associate Professor", **one of two announced in State Gazette No 45 of 28 May 2024,** in the field of higher education 7. Health and Sports, professional field 7.1. Medicine, speciality "Anatomy, Histology and Cytology" **for the teaching in Bulgarian and English** at the Department of Anatomy and Cell Biology, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

Paper and electronic materials were deposited for the procedure by **Dr. Desislava Marinova Marinova, MD, PhD** which include all the necessary documents under Article 126 of the Rules for the Development of Academic Staff at the Medical University "Prof. Dr. P. Stoyanov" - Varna.

## I. Biographical data and career profile of the applicant

Dr. Desislava Marinova Marinova, MD, Chief Assistant Professor at the Department of Anatomy and Cell Biology, Medical University "Prof. Dr. Paraskev Stoyanov" Varna, completed her Master of Medicine degree at the Medical University "Prof. Dr. Paraskev Stoyanov" Varna in 2006. In 2007, after a successful competition, she was appointed Assistant Professor at the Department of Anatomy and Cell Biology (then Department of Anatomy, Histology and Embryology) of the Medical University "Prof. Dr. Paraskev Stoyanov" Varna. From 1 January 2013 she acquired a recognised specialty in Anatomy, Histology and Cytology. In the period 2012-2014 she was a doctoral student in an independent form of study, and in 2014, after successfully defending a dissertation entitled 'Proliferation and differentiation of progenitor cells in the spinal cord of adult primates', she acquired the ESD "Doctor of Medicine" (AHE 7. Healthcare and sports, PF 7.1 Medicine, scientific specialty "Anatomy, histology and cytology"). From 2012 to 2014 she was a Coordinator for the students of the specialty Medicine 2nd year, English language training. From 2011 to 2014 and then from 2015 until now Dr. Marinova is responsible for the management of the dissection sector of the Department of Anatomy and Cell Biology, Faculty of Medicine, Medical

University - Varna. She is a member of the Bulgarian Anatomical Society and the Bulgarian Medical Association. She is fluent in written and spoken English. She has excellent digital competence.

## II. General description of the submitted materials for the competition.

The applicant has submitted in electronic form the required documentation for participation in the competition in full: administrative part – application, curriculum vitae, diplomas, academic transcripts; teaching and scientific activities – a list of publications with an evidential part, a reference to the contributions and citations that allow the assessment of the mandatory conditions and the mandatory quantitative and qualitative criteria and scientometric indicators.

## III. Assessment of the applicant's monographic work and scientific output

The scientific interests of Dr. Desislava Marinova can be grouped into three main thematic areas. She is the first or second author of most of the presented articles, with more than half of them published in journals and publications indexed and referenced in world-renowned scientific databases.

A significant part of Dr. Marinova's scientific publications, including her doctoral dissertation, are in the field of neurogenesis in the CNS. Her inquiries include the first detailed study of proliferative processes and the phenotype of proliferating cells in the intact spinal cord of newborn, juvenile and adult primates, which proves the presence of newly formed cells expressing the phenotype of glial and neural progenitors in this part of the CNS, as well as their predominant amount on the territory of the gray brain substance. Her studies on this topic show for the first time the presence of a stem-cell niche in the area surrounding the central canal of the spinal cord and demonstrate the increased number and density of proliferating cells in the cervical segments of the spinal cord of primates of all age groups. Dr. Marinova's large-scale studies of proliferation in the spinal cord logically justify the presence of a two-week intervention window after the formation of newly formed cells, which may become the basis of future strategies for treating spinal cord injury with endogenous stem and progenitor cells.

Dr Marinova's monograph "Analysis of Proliferative Processes in the Intact Spinal Cord of Mammals", published in 2024, is also devoted to this topic. The monograph systematizes the modern knowledge about the processes of proliferation in the spinal cord of different species of mammals: rodents, monkeys and humans. The processes of proliferation and differentiation in

all major areas of the spinal cord (gray matter, white matter and central canal) are described, with particular attention to the area of the central canal in the spinal cord with its progenitor characteristics and the phenotype of the regenerative cells present in it. Own data in monkeys were compared with other species and possible explanations for observed differences were analytically proposed. The monograph is a logical continuation of Dr. Marinova's dissertation, but it is distinguished by higher detail and comprehensiveness, paying attention to a number of unresolved problems and providing clinically relevant information on proliferative processes in primates that are evolutionarily closer to humans than widely used models in rodents. An essential strength of the monograph is also the comprehensive review of modern methods for highlighting and tracking the localization, morphology, the phenotype and fate of proliferating cells in the different stages of neurogenesis in the spinal cord through the application of highly specific markers individually or combined in single and multiplex immunohistochemical fluorescent and chromogenic stains. Throughout the text, Dr. Marinova summarizes contemporary literary data and illustrates her conclusions with the results of her own studies. Included own results further shape the impression of a long and purposefully conceived work, successfully arranged and shaped in this monograph. The concisely written conclusions to each problematically related part summarize the most important inferences and views of the author and her interpretations. The monograph is structured in four chapters with a total of 19 subchapters and is illustrated richly with photographs, diagrams and graphics. The literary sources used are mostly contemporary articles, books, textbooks and monographs by Bulgarian and foreign authors, indexed in world-renowned scientific databases. Their impressive number of 367 titles demonstrates the author's solid knowledge and skills in dealing with scientific literature. Despite the specificity of the described and analyzed problems, the language in the monograph is clear, concise and literary. The presented monograph work of Dr. Marinova is aimed at a wide audience of students, PhD students, morphologists and clinicians with a strong interest in neurobiology, both as a theoretical and methodological-applied guide. The technical parameters of the monograph fully meet the requirements for habilitation monograph work.

Dr. Marinova is also part of a team of authors with real methodical and fundamental scientific contributions to the detailed study of induced neurogenesis in the post-ischemic cerebellum of primates and prenatal neurogenesis in the human fetal brain.

Most of Dr. Marinova's other scientific publications and contributions are reports and studies of various anatomical variations, which clearly demonstrates her extensive experience as a dissectionist and morphologist. In them she applies classical and modern methods of macroscopic morphology and enriches the anatomical knowledge with the description of some rare but clinically significant anatomical variants.

Dr. Marinova is also part of a team investigating the peculiarities and variations in the shape of the human foot and the methods for their assessment. In her studies on this topic, she explores the variations in the joint veneers of the talar and calcanear bone, explores various generally accepted indices for assessing the shape of the foot. In these studies, the lack of correlation between the indices for assessing the shape of the foot and the constitutional features of the individual (weight, gender, BMI) was also demonstrated. The team establishes practically important relationships between some of the indices used, analyzes the characteristics of the shape of the foot and the high frequency of some of its variants among the Bulgarian population.

## IV. Reflection (citation) of the applicant's publications in national and foreign literature.

Dr. Desislava Marinova has presented for participation in the procedure the necessary information about the articles published in the scientific periodicals and the materials from participation in scientific forums. The evaluation of the citations was carried out on full-text publications in journals that are indexed in worldwide databases Scopus and Web of Science, as well as on the evidence provided by the applicant.

As evidence, the candidate submits a total of four citations in publications referenced and indexed in world databases, which brings her the required minimum of 60 points under this criterion (indicator E. of the Scientific Indicators for occupying the academic position "Associate Professor" in PA 7. Health and Sports).

4 citations x 15 points = 60 points

In fact, when searching the scientific databases, it was found that Dr. Marinova's publications had more citations than the four presented. However, the refusal of the candidate to submit all his citations, but only at the required minimum, is quite understandable, given the crippled and heavily dependent on indices and numbers procedure in Bulgaria for

assessing scientific and teaching competence when awarding scientific degrees and occupying academic positions.

## V. Comprehensive, qualitative assessment of teaching and teaching activities.

According to the submitted certificates, Dr. Desislava Marinova has more than 16 years of experience as a doctor, including 16 years of teaching experience in Anatomy, Histology and Cytology. According to the workload report, over the last five completed academic years Dr. Marinova has conducted 2,805 hours of academic activity. This corresponds to an average academic workload of 561 hours (more than 1.5 times the required academic workload of non-habilitated lecturers at MU-Varna), formed by exercises and seminars in Bulgarian (average yearly 273 hours) and English (average yearly 251 hours), as well as lectures (average yearly 38 hours) for students from the four faculties and the Medical College of MU-Varna. This workload does not include the auditorium workload of participation in semester examinations, which amounts to an average of approximately 200 hours per year (according to the methodologies for calculating auditorium workload during examinations at MU-Varna). Dr. Marinova participates in the development of numerous teaching aids and manuals. Actively participates in the enrichment and maintenance of the quality of the databases of test questions used in the standardized examinations of students in the department, in the development and planning of curricula. Over the past three years (together with Dr Meglena Angelova) she has been responsible for the training of Nurse students and has completely redesigned the curriculum and lecture course to meet the modern requirements of the profession.

Over the years, Dr Marinova has also been assigned key administrative responsibilities (course coordinator for the second course of English-language studies in Medicine, etc.). Since 2011 she has been successfully managing the organization of the activities in the dissection sector and the repository with teaching material, which is undoubtedly the busiest and most complex for management sector of the infrastructure of the Department of Anatomy and Cell Biology of the Medical Faculty, MU-Varna. Under her leadership, the structural and technical renovation of the dissection sector was successfully carried out and the various activities in it were continuously and smoothly provided. She actively participates in the creation and development of the Voluntary Donation Program of the Department of

Anatomy and Cell Biology, especially in the elaboration of protocols for the implementation of the various activities in the sector related to it.

## VI. Overall assessment of the applicant's compliance with the mandatory conditions and the mandatory quantitative criteria and scientometric indicators

The analysis of the applicant's scientific output, in accordance with the national minimum requirements for the loan of 'Docent' AD, is shown in the table below:

| Pool of indicators | Content | Associate Professor (number of points) | **Desislava Marinova (number of points)** |
|---|---|---|---|
| A | Indicator 1 | 50 | **50** |
| B | Indicator 2 | - | - |
| C | Indicators 3 or 4 | 100 | **100** |
| D | Indicator 7 | 80 | **157** |
| | Sum of indicators 5 to 9 | 200 | **201,29** |
| E | Sum of indicators 10 to 12 | 50 | **60** |
| F | Sum of indicators 13 to end | - | **50** |

A total of 50 points should be awarded under criterion F:
Indicator 15 – Specialty acquired: 40 pt.
Indicator 21 - Published university teaching tool: 1*20/2=10 t.

## VII. CONCLUSION

On the basis of the analysis of the documentation submitted for participation in the competition and in the light of the observations made, I consider that Dr Desislava Marinova Marinova, MD, **meets the mandatory and specific conditions and scientific criteria** of the LfDoASiRB, the Rules for its implementation and the Rules for the development of academic staff at the Medical University 'Prof. P. Stoyanov' – Varna, for **holding the academic position of "Associate Professor".**

I would recommend to the honourable members of the scientific jury **to award Dr. Desislava Marinova, MD, PhD, Academic position of Associate Professor in Anatomy, Histology and Cytology** for the needs of teaching in Bulgarian and English, at the Department of Anatomy and Cell Biology, Medical University "Prof. Dr. Paraskev Stoyanov" - Varna

29/08/2024 Signature:

Заличено на основание чл. 5, §1, б. „В" от Регламент (ЕС) 2016/679

Varna (Assoc.Prof. Stoyan Pavlov, MD, PhD)