

## STANDPOINT

By **Prof. Dr. Hristo Borisov Taskov, DSc**, member of the Scientific Jury, determined by Order No P-2852 of 09.010.2023 of the Rector of the Medical University of Plovdiv, to conduct a procedure for occupying the academic position "**Associate Professor**" in the scientific specialty "**Medical Biology**".

The competition for the academic position "**Associate Professor**" in the scientific specialty "**Medical Biology**", regional education 4. Natural sciences, mathematics and informatics, professional field 4.3. Biological Sciences to Dept. "Medical Biology" for the teaching of Bulgarian and English - one, is announced in the State Gazette, issue. 59 of 11.07.2023 and under an approved proposal by the FS of the Medical Fund of MU - Plovdiv (e.g. No 6 of 04.10.2023). In the competition, three candidates submitted documents, as follows in alphabetical order: Ch. ace. Milena Neykova Draganova, PhD, Ch. ace. Nikolay Hristov Mehterov, PhD and Ch. ace. Yana Nikolaeva Feodorova, PhD. In this order, the documents will be reviewed and the participants evaluated.

1. Chief Assist. **MILENA NEYKOVA DRAGANOVA, PhD** has submitted all documents in accordance with the requirements of the LDASRB and the Regulations for the Implementation of the LDASRB in connection with the procedure for occupying the academic position "ASSOCIATE PROFESSOR". Chief Assist. Milena Draganova graduated in 1997 from Plovdiv University "Paisii Hilendarski" with qualification BIOLOGIST and specialization "Molecular and Molecular and Molecular Aviation." In 2001 he joined the Department of Medical Biology at MU-Plovdiv as a biologist. From 2005 to 2011, she walked the path from assistant to chief assistant. Chief Assist. Milena Draganova has a total of 22 years of academic experience, of which 12 years as Chief Assistant. In 2007 she acquired a specialty in Medical Biology. In 2011 she acquired the PhD degree by defending a dissertation on the topic: *Immunobiological effects in vitro of Bulgarian propolis*. Milena Draganova has improved her qualification by participating in 25 national and international training courses. She speaks English at level B2.

**Teaching activities.** Chief Assist. Milena Draganova leads a lecture course, and in the last 3 years she has a total of 28 hours of lectures. During this period, Draganova's workload is a total of 1,663 hours, of which 1,480 hours are an exercise and 156 hours of exams. In co-authorship in 2020-2022 she has published a university textbook "*Parasitology. III supplemented and revised edition*". Also co-authored in the period 2003-2021, she participated in the writing of 26 textbooks. Draganova was a scientific consultant to three PhD students for acquiring the PhD Department, as well as a mentor of 34 interns.

**Scientific activity.** Ch. ace. Milena Draganova participated in the competition with one monograph, 51 publications. The monograph is entitled "*Drug carriers in the focus of targeted therapy*" and is co-authored with Bisera Pelicheva. I take these scientific papers for review. Of the publications, 25 (50%) were referenced in Scopus and WOS, and 16 (31%) had an impact factor. Their total impact factor is 42.5. Draganova's scientific works have been cited a total of 248 times, according to Scopus and WoS, she has 172 citations and 58 quotes outside of them. In theses and monographs it has been cited 18 times. *N-index* by Scopus is 7 and by WoS - 8. Draganova has participated in a total of 28 scientific projects, of which 17 projects are international and national and 11 inside university projects. She has been the head of one inside university project. Her total research workload is 655.



According to the self-assessment of the mandatory minimum scientific indicators of MU-Plovdiv for field 4. Natural sciences mathematics and informatics Chief Assist. Milena Draganova has a total of 3,400 points.

Thematically, the scientific activity of Milena Draganova can be classified in the following four main directions:

**1. *The first direction is the study of extracts of natural substances, solutions of synthetic products and drug supplying systems in vitro and in vivo.***

This direction covers the study of the immunomodulatory effect of natural propolis, essential masala (rosemary), aqueous peat extract, denatonium benzoate, high-fat diet, toxic action of composite materials, the use of polymer micro- and nanoparticles as drug-delivery systems for antitumor action.

Essential scientific contributions are the establishment of the immunomodulatory effect of propolis; the creation and characterization of the anti-tumor effect of nano-particles, carriers of lrearcous substances; establishing the potential of platelet-rich fibrin (PRFm) membranes to be used as a graft to enhance keratinization of attached epithelium. A major contribution to the study of composites and drug solutions applied in the dental practice is the establishment of their limit toxic concentrations, their cyto- and genotoxic characteristics, as well as their ability to trigger protective and reparative cellular mechanisms.

**2. *The second scientific direction is related to the study of the influence of energy flows in vitro and in vivo.***

This direction covers three groups of studies. The study of the influence of energy flows on the activity of 5-hydroxytryptamine on smooth muscle is focused on the role of various energy flows on the reactivity to 5-HT of isolated circular smooth muscle (GM) stripes. Based on the results of the research, a patent application was developed and a useful model of a custom set for low intensity quantum therapy radiating in the visible range. Another study focused on the impact of the effects of low-energy laser therapy in dentistry. The developed protocol is highly appreciated by dental specialists. A third group of studies analyzed the impact of low-intensity laser therapy on patients with oral lichen planus (BIR). For the first time, a complex (clinical, histological and molecular) assessment of the effectiveness of non-drug laser therapy in the treatment of BIR was made, and the higher effectiveness in influencing erosive forms of BIR was established. These results have become successfully defended in a dissertation of a dental specialist.

**3. *The third scientific direction is related to the study of patients with neurological diseases.***

This strand encompasses two groups of studies: cytokine profile and response to therapy in patients with multiple sclerosis; and the influence of stressors and UV-radiation on Alzheimer's. No correlation was found between serum cytokine concentrations and the expanded disability status scale. Suppression of IL-17A production was identified as one of the mechanisms determining the beneficial effect of disease therapy

**4. *The fourth scientific direction is Genetic and epigenetic changes in nuclear architecture in optimal and stressful conditions in vitro***

Research in this direction aims to clarify the role of linker histone Hho1p and Arp4p in chromatin dynamics in yeast aging. It has been found that the lack of linker histone makes cells more susceptible to various types of stress and accelerates the aging process.



In conclusion, Ch. ace. Milena Draganova is an established lecturer with extended academic experience as Assistant Professor. She has been involved in writing a textbook and numerous teaching aids. She has consulted the doctoral program of three doctoral students. In the scientific field Milena Draganova has sufficient scientific production and scientific indicators for holding the academic position "Associate Professor". My recommendation is to focus in the future on a basic scientific direction in which to carry out more systematic and in-depth research.

According to the table for mandatory minimum scientific indicators of MU-Plovdiv Ch. ace. Milena Draganova has a total of 3,400 points with a minimum of 1,030 points.

2. Chief Assist. **NIKOLAY HRISTOV MEHTEROV, DB** has submitted all documents in accordance with the requirements of the LDASRB and the Regulations for the Implementation of the LDASRB in connection with the procedure for occupying the academic position "Associate Professor". Chief Assist. Nikolay Mehterov graduated in 2008 from Plovdiv University "Paisii Hilendarski" with a qualification - BIOLOGIST and specialization "Molecular Biology". In 2013 he entered as an assistant at the Department of Medical Biology at MU-Plovdiv. In 2018, he was promoted to Chief Assistant. Nikolay Mehterov has a total of 10 years of academic experience, of which 5 years as Assistant Professor. In 2018, he acquired a specialty in Medical Biology. In 2013 he acquired the PhD Plovdiv University "Paisii Hilendarski" by defending a dissertation on the topic: *Positional cloning of atr7 and atr9 – genes related to the resistance of Arabidopsis thaliana to oxidative stress*. Nikolay Mehterov has improved her qualification by conducting short-term specializations in five established European universities and research centers. He speaks English at level B2.

**Teaching activities.** Chief Assist. Nikolay Mehterov leads a lecture course, and in the last 3 years he has a total of 14 hours of lectures. During this period, Mehterov's academic workload is a total of 1,443 hours, of which 1,306 hours are an exercise and 125 hours of exams. He has presented 10 scientific publications, thematically united as *"Molecular signatures in oncological and inflammatory diseases"*. They are equated to habilitation work. In co-authorship, he has participated in the writing of 16 teaching aids. There is no evidence of participation in a university textbook. Mekhterov was a scientific consultant to a PhD student for acquiring the PhD Department. He is an invited guest lecturer for lectures and exercises at the Faculty of Biology of Plovdiv University "P. Hilendarski" in the disciplines "Protozoan parasites in man and animals" with a master's program "Parasitology" (part-time), I course, 1st semester and elective course "Molecular Parasitology" with a master's program "Parasitology" (part-time), I year, 2nd semester.

**Scientific activity.** Ch. ace. Nikolay Mehterov participated in the competition with a total of 55 publications, 10 of which were equated to habilitation work. I take these scientific papers for review. Of the publications, 31 (56 %) were referenced in Scopus and WOS and 28 (51 %) had an impact factor. Their total impact factor is 161.4. Mehterov's scientific work has been cited a total of 1,044 times, according to Scopus and WoS. *N-index* by Scopus is 18. Mekhterov has participated in a total of 15 scientific projects, of which 7 projects are international and national and 8 inside university projects. He was the head of one national project. His total research workload is 1,246.

According to the self-assessment of the mandatory minimum scientific indicators of MU-Plovdiv for the field 4.Natural sciences mathematics and informatics , Chief Assist. Nikolay Mehterov has a total of 4,480 points.



Thematically, the scientific activity of Nikolay Mekhterov can be classified in the following three main directions:

**1. *The first scientific direction is Molecular signatures in oncological diseases***

In this direction, Nikolay Mekhterov has made the following scientific contributions:

- 1.1 A new panel of small noncoding RNAs has been created, having clinical relevance related to the prediction of relapse development and life expectancy in patients with oral squamous cell carcinoma.
- 1.2 It has been found that miRNA-30c-5p in saliva of patients with OPC can outsource patients from healthy controls
- 1.3 A high level of promoter methylation of Brca1, Chd1, Cdh13, Cdkn1c, Dapk1, Gstp1 Opcml, Runx3, Sfrp2, Timp3 and Vhl tumor-suppressor genes in tumor tissues from the oral cavity, head and neck has been demonstrated.
- 1.4 A new non-invasive method was used to distinguish patients with different solid tumors by analyzing serum samples by Area-Enhanced Raman Scattering Spectroscopy.
- 1.5 For the first time, the clinical relevance of the tissue expression of YKL-40 as a prognostic marker in metastatic colorectal carcinoma has been studied.
- 1.6 High gene and protein expression of LAMP-1 was found to be associated with tumour progression in high-grade gliomyl
- 1.7 Aspects of nutrigenomics and its influence on the regulation of protein-coding and protein-non-coding genes in oncological diseases have been studied.

**2. *The second direction is related to a molecular profile in pathologies associated with chronic non-infectious inflammatory process.***

The following scientific contributions have been made in this direction:

- 2.1 A mechanism for the upregulation of YKL-40 by miRNA-214 in patients with systemic sclerosis (SS) based on in silico and in vitro experiments in blood samples has been proposed.
- 2.2 A mechanism to control YKL-40 synthesis involving a gene-regulatory axis of long-chain noncoding RNAs (DVRNA), miRNAs and YKL-40 mRNAs at SS has been proposed.
- 2.3 The relationship between brain neurotrophic factor (BDNF) and immune-inflammatory pathways was studied, as well as a network of BDNF interactions with other proteins and its involvement in psychoses (depression and schizophrenia), neurological development, neuronal functions and the immune system was outlined.
- 2.4 Specific miRNA changes in patients suffering from periodontal disease were identified.

**3. *The third scientific strand concerns gene-regulatory networks related to the response of plants to oxidative and abiotic stress***

The following scientific contributions have been made in this direction:

- 3.1 A novel gene encoding hydroxyproline-rich glycoprotein (BCHP) has been identified, acting as a positive regulator of programmed cell death (PCC) induced by active oxygen forms (ACF).

- 3.2 The regulatory function of the NAC transcription factor JUNGBRUNNEN1 (JUB1) in the resistance of tomato (*Solanum lycopersicum*) to drought has been demonstrated.
- 3.3 NAC transcription factor JUNGBRUNNEN1 in *Arabidopsis* has been shown to control the metabolism of genes involved in gibberellin and brassinosteroid biosynthesis in tomato.

In conclusion, Ch. ace. Nikolay Mekhterov is an established lecturer, but with relatively short experience as an assistant professor. He has been involved in writing numerous teaching aids. She has consulted the doctoral program of one PhD students. In the scientific field Nikolay Mekhterov has very good scientific production and scientific indicators for occupying the academic position "Associate Professor". My recommendation is to focus on writing a monograph and participating in a textbook in the future.

According to the table for mandatory minimum scientific indicators of MU-Plovdiv Ch. ace. Nikolay Mekhterov has a total of 4,580 points with a minimum of 1,030 points required.

**3. Chief Assist. YANA NIKOLAEVA FEODOROVA, PhD** has submitted all documents in accordance with the requirements of the LDASRB and the Regulations for the Implementation of the LDASRB in connection with the procedure for occupying the academic position "ASSOCIATE PROFESSOR". Chief Assist. Yana Feodorova graduated in 2008 from the University "Ludwig Maximilian" - Munich with an educational qualification degree - BIOLOGIST. In 2011 she entered as an assistant at the Department of Medical Biology at MU-Plovdiv. In 2015, she was promoted to Chief assistant. Yana Feodorova has a total of 13 years of academic experience, of which 8 years as Ch. assistant. In 2016, she acquired a specialty in Medical Biology. In 2016 she acquired PhD degree by defending a dissertation on the topic: *Chromatin organization during the terminal differentiation of mouse photoreceptors – dynamics and formation of inverted nuclear architecture*. Yana Feodorova has improved her qualification by participating in 16 national and international training courses.

**Teaching activities.** Chief Assist. Yana Feodorova leads a lecture course at the Department of Medical Biology, and in the last 3 years she has a total of 4 hours of lectures. In this period, Feodorova's workload was a total of 1,662 hours, of which 1,423 hours were exercise and 233 hours of examinations. In 2008 she was the head of students Ludwig Maximilian University – Munich. In addition, from 2021 until now she has been invited to lecture *at the European advanced postgraduate course in classical and molecular cytogenetics in Nîmes, France*. In the period 2020-2021, Feodorova was an academic expert at the [www.study.com](http://www.study.com) platform. In co-authorship, she has participated in the writing of 9 textbooks. He speaks English at level C2.

**Scientific activity.** Ch. ass. Yana Feodorova participated in the competition with one monograph, 28 publications. The monograph is titled *"Nuclear Organization of the Genome"*. I accept these scientific papers for review. Of the publications, 25 (71%) are referenced in Scopus and WOS, and 16 (54%) have an impact factor. Their total impact factor is 124.1. Draganova's scientific works have been cited a total of 755 times, and according to Scopus



and WoS, she has 728 citations. Outside of that, 16 quotes. In theses and monographs it has been cited 18 times. *H-index by Scopus* is 12 and by WoS - 11. Feodorova has participated in a total of 16 scientific projects, of which 9 projects are international and national and 7 inside university projects. She was the head of a 7 inside university project. She has a protected patent utility model. Her total research workload is 420. For achievements in science Feodorova has received 4 awards and awards.

1. Nomination for the Grand Prix for Young Scientist "Pythagoras" of the Ministry of Education and Science (2019)
2. Selection in the National Program for Young Scientists and Postdoctoral Students of the Ministry of Education and Science (2019)
3. First prize for a review presentation in the competition "Science and Youth 2012" on the topic "Psychological stress and immunity - does gene regulation matter?"
4. Diploma for the best presented poster on "Transcriptional analysis in malignant gliomas" at the Tenth National Conference of Medical Biology, 25 - 27 October, 2013, Pleven

According to the self-assessment of the mandatory minimum scicometric indicators of MU-Plovdiv for field Ch. ass. Yana Feodorova has a total of 3,417 points.

Thematic research of Yana Feodorova can be classified in the following 5 main directions:

**1. *The main scientific direction is related to studies on the spatial organization of the genome***

The following scientific contributions have been made in this direction:

- 1.1 A correlation was found between the degree of chromatin compactness and the gene density, the gene-poor heterochromatin being the one which decondenses during mouse rod differentiation and reaches the level of compactness of euchromatin
  - 1.2 Demonstration of the absence of a Bar-body in inverted nuclei in mature mouse photoreceptor nuclei and establishing the role of MeCP2 as a marker of the differentiated state of the cell
  - 1.3 Establishment of a protocol for the sorting of mouse rod pericaries by flow cytometry on front and side based on the high backscatter.
  - 1.4 Demonstration of the key role of heterochromatin interactions in spatial separation of eu- and heterochromatin in the cell nucleus.
  - 1.5 Demonstration of the phenomenon "transcriptional loop" observed in long genes with high expression levels, which provides a new model for the organization of transcription in the cell nucleus.
- 2. *Studies on the mutational and/or transcriptional profile of solid tumours – glioma and colorectal carcinoma***

- 2.1 Determination of biomarkers of the malignant potential of gliomas and those relevant for molecular subtyping of glioblastoma multiforme
- 2.2 Demonstration of the dependence of transcriptional levels of the YKL40 gene on the KRAS-mutation status of tumor tissue.
3. ***In vitro studies on the pharmacological potential of extracts from the seeds of Ginkgo biloba*** – It has been shown that the active ingredients of the Ginkgo biloba endosperm extract may interact additively or synergistically for protection against cancer. On the basis of these studies, a patent/utility model is protected.

#### 4. ***Other scientific directions***

- 4.1 In vitro studies on the cytotoxic effect of spirohydantoins and their metal complexes in tumor cell lines in search of effective antitumor agents
- 4.2 In vitro studies on biocompatibility and cytotoxic effect of metal wafers modified in different ways for medical purposes in cell lines
- 4.3 Study of the expression of genes coding for products related to resistance of *Pseudomonas aeruginosa* to carbapenems

In conclusion, Ch. ace. Yana Feodorova is an established lecturer with international recognition. She has been involved in writing numerous teaching aids. In the scientific field Yana Feodorova has very good scientific production and scientific indicators for taking the academic position "Associate Professor". My recommendation is to focus on writing a textbook in the future.

According to the table for mandatory minimum scientific indicators of MU-Plovdiv Ch. ace. Yana Feodorova has a total of 3,417 points with a minimum of 1,030 points.

In order to get a clearer idea of the qualities of the three participants in the competition, I drew up a comparative table with the indicators.

**TABLE 1. COMPARATIVE TABLE OF INDICATORS OF PARTICIPANTS IN THE COMPETITION**

	Milena Draganova	Nikolay Mekhterov	Yana Feodorova
<b>QUALIFICATION</b>			
Higher education	Biology	Biology	Biology
General experience in academic position	22	10	13
Internship as Ch. assistant	12	5	8
PhD degree	2011 year	2013 year	2016 year
SPECIALTY - medical biology	2007	Oct. 2018	Oct. 2016
Fluent in English - level.	Q2	Q2	S2
<b>LEARNING ACTIVITY</b>			
<b>WORKLOAD IN THE LAST 3 YEARS – IN HOURS</b>			
Lectures	28	14	4



Exercises	1480	1306	1423
Exams	156	125	233
<b>TOTAL</b>	<b>1664</b>	<b>1443</b>	<b>1662</b>
Textbook	1		
University supplies	26	16	9
Scientific consultant of PhD students	3	1	
Academic trainee mentor	34		
<b>RESEARCH</b>			
<b>Habilitation work</b>	Monograph	10 publ.	Monograph
<b>Total number of publications in scientific journals</b>	51	45	28
Of these published in Scopus and WOS	25	31	20
With impact factor on Clarivate Analytics	16	28	15
Total IF Clarivate Analytics –	42.5	161,4	124,1
Scopus h-index	7	18	12
WoS h-index	8		11
Patent/Useful Model	1 application		1
Participation in scientific forums	72		43
Participation in international and national scientific projects	17	7	9
Participation in in-house university research projects	11	8	7
National Project Manager		1	
Head of an in-house university scientific project	1		4
Citations in international journals - after exclusion of autocitations according to data of: Scopus and WoS -	172	1 044	728
Citations in scientific publications, found outside Scopus and WOS databases	58		16
The citations in theses, monographs and collective volumes with scientific peer review	18		18
Reviews		41	
Scientific consultant to undergraduates and PhD students	3 docs.	1 doc	
Research workload	655	1246	420
Distinctions & awards			4
<b>OVERALL ASSESSMENT OF MANDATORY MINIMUM SCICOMETRIC INDICATORS OF MU-PLOVDIV - points</b>			
	3 400	4 580	3 417



## Conclusion:

Table 1 shows that all three participants fully meet the requirements of the LDASRB and the Regulations for the Implementation of the LDASRB at MU-Plovdiv for occupying the academic position of "Associate Professor". There is no bright candidate. Each of them has stronger and weaker sides. For example, Milena Draganova stands out with her very good teaching work and great experience as Ch. assistant, but no scientific field is formed, and the number of publications with an impact factor is relatively small. Nikolay Mekhterov is distinguished by his very good scientific indicators, but has less experience as an assistant professor and a lower performance in teaching activities. Yana Feodorova has emerged as a promising teacher and scientist. It has a scientific field and quality scientific production - 71% of the publications are referencing in Scopus and WoS, and 54% have an impact factor

Based on the complex assessment of the indicators presented in Table 1, I rank the participants in the competition as follows:

1. First , chef assistant . Nikolay Hristov Mekhterov, PhD;
2. Secondly, chef assistant. Milena Neykova Draganova, PhD and
3. Thirdly, chef assistant Yana Nikolaeva Feodorova, PhD.

In this regard, I propose to the esteemed Scientific Jury to vote positively for - **Chief Assist. Nikolay Hristov Mehterov, PhD** to take the academic position "Associate Professor" in the scientific specialty "Medical Biology", regional education 4. Natural sciences, mathematics and informatics, professional field 4.3. Biological sciences to cat. "Medical Biology" at MU-Plovdiv for the teaching of Bulgarian and English.

Plovdiv

29.11.2023

Prepared the opinion:

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

Prof. Dr. Hristo Taskov, DSc