Assessment for appointment to the position of Associate Professor

On the competition for occupying the academic position of *Associate Professor* in the field of higher education area 7 "Healthcare and Sports," professional field 7.1 "Medicine," scientific specialty "Nuclear Medicine," announced in the State Gazette, issue No. 30 of 08 April 2025, for the needs of the Department of "Nuclear Medicine, Metabolic Therapy and Radiation Therapy," Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna,

by Prof. Dr. Elena Nikolova Piperkova, D.Sc.

Head of the Clinic of Nuclear Medicine at the University Specialized Hospital for Active Treatment in Oncology "Prof. Ivan Chernozemski" – EAD, Sofia.

By Order No. 109-258 of 06 June 2025 of the Rector of the Medical University – Varna, and in accordance with the decision of the First Meeting of the Scientific Jury, I was appointed to provide an Opinion in the present competition.

The sole applicant in the announced competition is **Chief Assistant Professor Dr. Marina Dyankova, Ph.D.,** from the Department of "Nuclear Medicine, Metabolic Therapy and Radiation Therapy," Faculty of Medicine, Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

Brief Biographical Data and Professional Development

Dr. Marina Ivanova Dyankova was born on 3 February 1985 in Odessa, Ukraine. She graduated with distinction in Medicine from Odessa State Medical University in 2008. From 2008 to 2010, she specialized in Family Medicine at Odessa State Medical University, and in 2010 she obtained a specialty in General Practice – Family Medicine.

In 2013, she legalized her professional qualification as a physician in the Republic of Bulgaria. Following the successful recognition of her medical diploma, she worked at Medical Center "Klinika Nova" Ltd., Varna (2014–2015). Since 2015, she has been employed as a physician at the Clinic of Nuclear Medicine and Metabolic Therapy, University Hospital "St. Marina" EAD, Varna.

In 2018, she was appointed as a part-time assistant lecturer at the Medical University – Varna. In February 2019, she was enrolled as a doctoral student under the supervision of Prof. Dr. Borislav Chaushev, Ph.D., with the dissertation topic *"68Ga-PSMA PET/CT in Prostate Cancer – Advantages and Possible Diagnostic Pitfalls."* In 2019, she obtained a specialty in Nuclear Medicine.

Since January 2020, she has held the position of Assistant Professor in the Department of Diagnostic Imaging, Interventional Radiology, and Radiation Therapy at the Medical University – Varna. After the successful defense of her dissertation in June 2022, she was awarded the educational and scientific degree *Doctor* in the scientific specialty "Medical Radiology and Roentgenology (including the use of radioactive isotopes)." In June 2023, she was appointed as Chief Assistant Professor in the same department.

Dr. Dyankova, Ph.D., actively participates in scientific forums in Bulgaria and abroad, as well as in continuing education courses organized by the IAEA and EANM in Latvia and Bulgaria, annual European congresses of EANM, ESOR, ESHI, BAR, and the international WARMTH symposium in Finland. She has attended seminars of the European School of Nuclear Medicine organized by EANM and ESMIT, as well as annual online continuing education courses provided by SNMMI, ESOR, EFRS, and CHILI.

She is a member of WiN Bulgaria – "Women in Nuclear – Bulgaria" Association, the Bulgarian Society of Nuclear Medicine (BDNM), the European Society for Hybrid, Molecular and Translational Imaging (ESHI), the European School of Radiology (ESOR), the European Association of Nuclear Medicine (EANM), and the Bulgarian Association of Radiology (BAR). Dr. Dyankova participates in international training programs and shares her expertise with medical students and radiographer trainees.

Her professional interests include prostate cancer, Langerhans cell histiocytosis, multiple myeloma, ovarian cancer, hyperparathyroidism, and malignant melanoma. She is fluent in Russian, Ukrainian, and English.

Scientometric Indicators

In the present competition for occupying the academic position of *Associate Professor*, Chief Assistant Professor Dr. M. Dyankova, Ph.D., participates with a total of **37 scientific works** (full-text articles and conference papers), most of which were published after the successful defense of her doctoral dissertation.

- **Full-text articles: 15**, of which 11 are published in peer-reviewed journals indexed in internationally recognized scientific databases.
- **Published abstracts from scientific forums in Bulgaria and abroad: 25.**
- **Conference participations in Bulgaria and abroad, documented in official programs: 25.**

In the presented materials, Chief Assistant Professor Dr. M. Dyankova is the first author of 12 works, the second author of 5 works, and third or subsequent author of 20 works. A total of 33 of her publications appear in peer-reviewed journals indexed in internationally recognized scientific databases.

The cumulative impact factor (IF) amounts to 369.979, which attests to the significance of the scientific output.

Chief Assistant Professor Dr. M. Dyankova has provided a list of citations that meet and exceed the formal requirements for occupying the academic position of *Associate Professor*. The citations are found in both Bulgarian and international journals, confirming the relevance, contribution, and topicality of her research interests against the background of high publication activity.

Evaluation of Contributions

The submitted scientific works and the results of the research activities of Chief Assistant Professor Dr. Marina Dyankova, Ph.D., are thematically grouped into the following scientific fields:

I. Nuclear Oncology

1. **Studies and results published in scientific papers contributing to the diagnosis and follow-up of prostate cancer (PC).**
2. **Studies with published results and contributions related to other oncological diseases.**

II. Other Contributions in Nuclear Medicine

I. Nuclear Oncology

1. Studies and results published in scientific papers contributing to the diagnosis and follow-up of prostate cancer (PC)

1.1. For the first time in nuclear medicine practice in Bulgaria, the application of the newly introduced hybrid imaging modality, 68Ga-PSMA PET/CT, was investigated in a large cohort of patients with biochemical recurrence of PC after radical therapy.

1.2. Prognostic factors for PSMA-PET positivity, factors influencing detection rates, and the advantages of the method compared to CT were determined.

1.3. The application of PSMA PET/CT was investigated in patients with biochemical progression after radical prostatectomy across a wide range of tumor marker values, with emphasis on low PSA levels.

1.4. The influence of PSA levels on the sensitivity and detection rate of PSMA-PET was analyzed; correlations were established between PSA levels and detection rates of recurrent PC at different anatomical sites, as well as between Gleason score and detection rate, sites of recurrence, prior androgen deprivation therapy (ADT)/hormone therapy, and PSA values.

1.5. The application of PSMA-PET was studied in the initial regional nodal (N) and distant metastatic (M) staging of patients with primary PC of intermediate and high risk before radical therapy. The advantages of PSMA-PET over conventional CT were identified.

1.6. For the first time in nuclear medicine practice in Bulgaria, an in-depth investigation was carried out on the application of the method in patients with ISUP grade 5, focusing on the characteristics of nodal and bone metastases, the relationship between detection rates for different metastatic sites, PSA values, and clinical T stage.

1.7. For the first time in national nuclear medicine practice, the influence of ^68Ga-PSMA PET/CT on (N, M) staging was analyzed.

1.8. High sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of 68Ga-PSMA PET/CT were demonstrated, and the risks of false-positive and false-negative results were described.

1.9. A detailed investigation was performed on the relationships between a positive/pathological PSMA PET/CT result and PSA values, Gleason score/ISUP grade, clinical T stage, and other factors in patients with biochemical recurrence (BCR).

1.10. An optimized interpretation of PSMA-PET results was achieved, with identification of sources of diagnostic errors, including various patterns of physiological PSMA activity and pathological PSMA antigen expression unrelated to PC.

2. Studies with published results and contributions related to other oncological diseases

2.1. The role of 18F-FDG PET/CT in malignant melanoma has been investigated and confirmed.

2.1.1. The diagnostic and clinical value of [18F]FDG PET/CT was assessed for the follow-up of patients after definitive treatment of the first regional recurrence, as well as for the early detection of operable disease progression.

2.1.2. The method demonstrated significantly higher effectiveness compared to conventional imaging techniques in monitoring high-risk patients for disease progression.

2.2. The role of 18F-FDG PET/CT in diagnosing POEMS syndrome was evaluated. Whole-body assessment of bone lesions through combined anatomical and metabolic imaging, along with the detection of associated findings such as organomegaly, lymphadenopathy, and skin lesions, proved to be crucial for the diagnosis and evaluation of the syndrome.

2.3. The parameters of 18F-FDG PET/CT were studied in patients with multiple myeloma referred for staging due to clinical or laboratory evidence of relapse or progression after treatment. The findings support the use of 18F-FDG PET/CT as a valuable imaging modality in such cases.

2.4. A comparative study between physical examination/endoscopy and FDG-PET/CT for detecting recurrences of head and neck squamous cell carcinoma after treatment demonstrated high sensitivity and predictive value for detecting local recurrences.

2.5. The role of FDG PET/CT in detecting metachronous or synchronous tumors in patients with head and neck carcinoma was examined.

2.6. The role of 18F-FDG PET/CT in determining therapeutic strategy in patients with cutaneous melanoma at various clinical stages of the disease was evaluated.

2.7. The high diagnostic value of whole-body 18F-FDG PET/CT in identifying the primary tumor, along with simultaneous TNM staging and selection of the optimal lesion for targeted biopsy, was established.

2.8. The role of 18F-FDG PET/CT in patients with osteolytic lesions of unknown origin suspicious for multiple myeloma was evaluated.

2.9. The application of 18F-FDG PET/CT in assessing the metabolic activity of osteolytic lesions in newly diagnosed multiple myeloma was studied, identifying it as a predictive factor for overall survival.

2.10. Of exceptional contribution are the published clinical case reports in which nuclear medicine diagnostic hybrid imaging methods played a crucial and decisive role in the individualization of treatment and improvement of prognosis.

II. Other Contributions in Nuclear Medicine

1. The role of 18F-FDG PET/CT in detecting FDG-avid lymph nodes in response to SARS-CoV-2 vaccination was investigated, with the aim of differentiating them from lymphogenic metastases. Such differentiation is critical for determining subsequent therapeutic approaches in patients with diagnosed carcinoma.
2. A clinical case was presented describing a rare manifestation of recurrent invasive giant cell meningioma in a patient with confirmed gastric carcinoma. In this case, the precise evaluation of the molecular metabolic image in conjunction with the hybridized CT image from 18F-FDG PET/CT scanning played a decisive role in establishing the correct diagnosis and excluding brain metastases from gastric carcinoma.

Teaching Activity

Dr. Marina Dyankova conducts practical training sessions for fourth-year Bulgarian and international medical students, as well as for radiography students from the Medical College – Varna. She serves as a member of the examination committees for these students. Dr. Dyankova's teaching workload exceeds 100 academic hours per academic year, meeting the requirements for participation in the competition.

She actively participates as a lecturer in the Basic Course in Nuclear Medicine for resident physicians. Dr. Dyankova also takes part in numerous educational and scientific forums in Bulgaria with international participation, as well as public medical events organized by the

Clinic of Nuclear Medicine and Metabolic Therapy at University Hospital "St. Marina" – Varna and the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.

Dr. Dyankova is a member of the Academic Council of the Faculty of Medicine at the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna.
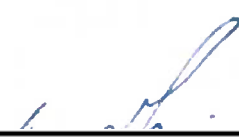
Clinical Activity

Since 2015, Dr. Dyankova has been actively involved in the daily work of the Clinic of Nuclear Medicine and Metabolic Therapy at University Hospital "St. Marina" – Varna, successfully applying her expertise in the specialty. She works diligently in close collaboration with colleagues from all clinical departments of the University Hospital "St. Marina" – Varna, as well as with medical institutions across the country. She is proficient in performing all examinations carried out in the Clinic and participates in the development and implementation of new diagnostic methods.

In conclusion, I would like to emphasize that Dr. Marina Dyankova, Ph.D., demonstrates a convincing record of creative work as a lecturer and specialist in nuclear medicine, with many years of accumulated practice and experience. She actively participates in the training of both undergraduate and postgraduate students and shows a strong and responsible interest in new scientific research. She is respected not only by her colleagues in the field of nuclear medicine and diagnostic imaging but also by those from other clinical specialties. She possesses qualities of responsibility, teamwork, and an innovative spirit.

The submitted scientific works are clear evidence of her creative and research-oriented approach, with both methodological and applied scientific contributions. Her publications and presentations at international scientific forums contribute significantly to the development of nuclear medicine in Bulgaria and to its recognition within the international medical community.

Considering the scientific contributions I have analyzed, as well as Dr. Dyankova's teaching and clinical experience, and my personal impressions from her participation in examinations, assessment of her knowledge, collegiality, teamwork, medical ethics, and ability to overcome language barriers, I am convinced that she meets and exceeds the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria and the Regulations on the Development of the Academic Staff at the Medical University "Prof. Dr. Paraskev Stoyanov" – Varna. I will vote in favor ("YES") and strongly recommend that the esteemed members of the Scientific Jury also vote positively for the appointment of **Dr. Marina Ivanova Dyankova to the academic position of Associate Professor.**

Prof. Dr. Elena Piperkova, D.Sc.

Sofia,
12 August 2025