

REVIEW

by Assoc. Prof. Vesela Ivanova Todorova, MD, PhD
Head of the Department of "General and Clinical Pathology",
Faculty of Medicine, Medical University-Sofia,
appointed as an external member of the Scientific Jury, according to
Order No. R -2303/03.07.2024 of the Vice-Rector for Research and Development,
Medical University – Plovdiv.

Subject: Competition for the Academic Position "Professor" in the Scientific Specialty "Pathological Anatomy and Cytopathology" in the Field of Higher Education 7. Health and Sports, Professional Direction 7.1. Medicine for the needs of the Department of "General and Clinical Pathology," Medical Faculty, Medical University - Plovdiv.

The review is prepared in accordance with the requirements of the Law for the Development of Academic Staff in Bulgaria, the Regulation for the Application of the Law for the Development of Academic Staff, and the Regulation for the Occupation of the Corresponding Academic Position, adopted in the Regulation for the Structure and Activities of MU-Plovdiv.

In the competition for the academic position of "Professor" in the scientific specialty "Pathological Anatomy and Cytopathology" at the Department of "General and Clinical Pathology," announced in the State Gazette, issue 35/19.04.2024, there is one candidate: Assoc. Prof. Elena Galabova Poryazova-Markova, MD, PhD.

I. Analysis of the Candidate's Career Profile

Assoc. Prof. Elena Galabova Poryazova-Markova was born on January 7, 1968, in Plovdiv. She completed her higher medical education in 1992 at HMI-Plovdiv and was elected as an assistant in the Department of General and Clinical Pathology at the same institution in 1993. Since 2000, she has a recognized specialty in general and clinical pathology. In 2007, she was enrolled as a PhD student, and in 2010, Dr. Poryazova was awarded the academic degree "PhD" after defending her dissertation on the topic: "Differential-Diagnostic Significance of Immunohistochemical Examination with Cytokeratin 7 and 20, Beta-Catenin, and CDX2 in Colorectal Carcinomas and Metastases from Adenocarcinomas in the Peritoneum." Dr. Poryazova has successively served as a senior and chief assistant in the Department and as a pathologist in the Clinical Pathology Department at UMBAL "St. George" - Plovdiv. In 2011, she became the Head of the Clinical Pathology Department at UMBAL "Pulmed" EAD, Plovdiv.

In 2005, Dr. Poryazova obtained a professional qualification in "Health Management" from the European College of Economics and Management, Plovdiv. In 2014, she was habilitated as an Associate Professor in the Department of General and Clinical Pathology at MU-Plovdiv, where she continues to work. In 2024, she was elected as Vice-Dean for Project Activities and International Cooperation at the Medical Faculty of MU-Plovdiv.

Assoc. Prof. Poryazova engages in teaching, research, and clinical-diagnostic activities. She is a member of the state examination commission in pathology, various academic and professional organizations, a member of scientific committees for academic positions, and a reviewer of scientific projects. Assoc. Prof. Poryazova is proficient in written and spoken English and Russian. She has over 30 years of general work and teaching experience. She has conducted exercises and later lectures in Bulgarian and English for students in medicine, dental medicine, and pharmacy, as well as for students from the Medical College. According to the presented report on the teaching workload of Assoc. Prof. Poryazova for three consecutive years, she exceeds the required hours of lectures, exercises, and semester exams for each year.

In addition to training students, Assoc. Prof. Poryazova conducts training for residents in the specialty of General and Clinical Pathology and is a member of the state examination commission for the same specialty. She also participates in the training of students under the Erasmus program at MU-Plovdiv. The last assessment of Assoc. Prof. Poryazova is "Very Good" (the highest grade according to the Regulation of MU-Plovdiv).

II. General Description of the Materials Submitted for the Competition

The materials for the competition are presented on an electronic medium. The candidate's documents comply with the requirements of the Law for the Development of Academic Staff of the Republic of Bulgaria and the Regulation for Academic Development of MU - Plovdiv, organized and numbered precisely according to the requirements and include an application with a complete set of attachments.

In the competition, Assoc. Prof. Poryazova participates with:

1. An author's abstract of the dissertation for the academic degree "PhD";
2. A habilitation work - a peer-reviewed monograph;
3. 20 full-text publications in journals indexed in Scopus/Web of Science;
4. 1 abstract in a refereed journal indexed in Scopus/Web of Science;
5. 25 publications in non-refereed journals with scientific review or published in edited collective volumes;
6. 6 chapters in a collective monograph;
7. 36 participations in scientific congresses and conferences;
8. 5 university textbooks;
9. 9 university notebooks;
10. 72 citations of articles in refereed journals indexed in Scopus and Web of Science.

III. Evaluation of the Candidate's Scientific Works for Overall Academic Development

In the current competition, Assoc. Prof. Poryazova participates with a total of 45 publications after her associate professorship and 72 citations after her previous habilitation. A total of 45 full-text publications in scientific journals are presented, of which 20 are in refereed and indexed journals in Scopus and Web of Science, and 25 are in non-refereed journals. Additionally, for the current competition, 72 citations from 10 selected publications from 2014-2024 are presented in detail.

Total publications: 80, of which 45 after the previous habilitation; Total citations: 101, of which 72 after the previous habilitation, of which 39 in journals with IF; h-index – 5 (Scopus); 6 (Web of Science). Assoc. Prof. Poryazova has been a scientific supervisor for two successfully defended PhD students – Dr. Desislava Bozhkova and Dr. Denitsa Serteva in the scientific specialty Pathological Anatomy and Cytopathology. She is also the scientific supervisor of PhD student Dr. Veselin Chonov.

Participation in Projects: Since 2014, Assoc. Prof. Poryazova has been the Head of three intra-university doctoral projects:

- DPD-15/2018 on the topic: "Epithelial-Mesenchymal Transition in Endometrial Carcinomas, Carcinosarcomas of the Uterine Body, and Endometriosis";
- DPD-06/2020 on the topic: "Expression of Epithelial and Mesenchymal Markers and the Role of Tumor-Associated Tissue Eosinophils in the Progression and Metastasis of Gastric Carcinoma";
- DPD-04/2022 on the topic: "Expression of anti HIF1alpha, Ki 67, E-cadherin, β -catenin, SMA in endometriosis foci, in endometrial and ovarian carcinomas".

The three projects have been successfully completed. Associate Professor Poryazova is also a participant in three additional projects:

- An international scientific European project under Erasmus+ on the topic: "Digital Transformation of Histology and Histopathology through Virtual Microscopy (VM) for an Innovative Medical School Curriculum," 2023.
- She is the leader of an applied project PSNIIR-MUP "Program for Strategic Research and Innovations for the Development of MU-Plovdiv" on the topic: "Digital Pathology and Scanning of Microscopic Preparations," 2024.
- She is the principal investigator of an applied project PSNIIR-MUP "Program for Strategic Research and Innovations for the Development of MU-Plovdiv" on the topic: "Application of Artificial Intelligence (AI) in Pathology Education," 2024.

From the provided information about the candidate, it is evident that she meets the minimum national criteria for acquiring the academic position of professor and additional criteria set forth in the Regulations for the Development of Academic Staff at MU-Plovdiv, exceeding the required points in some indicators. From the mandatory 1240 points, Associate Professor Poryazova has a total of 3953.34 points.

The materials presented by Associate Professor Poryazova demonstrate successful collaboration in an interdisciplinary environment and good cooperation with colleagues from various medical specialties, where the participation of a pathologist ensures accuracy in the diagnostic verification of results and morphological interpretation. Particularly interesting are the rare diagnostic cases from Associate Professor Poryazova's practice, which are well illustrated and documented.

The dissertation work concerns the validation of a diagnostic panel of antibodies in metastases from adenocarcinomas in the peritoneum with an unknown primary site. A scheme for diagnosing peritoneal metastases with an unknown primary site has been proposed.

The full-text publications presented for the period 2014-2024 are the result of collaborative studies with specialists from clinical medical specialties and work on research projects (national, international, intra-university), mainly in the fields of surgical pathology, gastroenterology, orthopedics, pediatric surgery, gynecological pathology, and maxillofacial surgery:

- Research related to the pathology of odontogenic cysts and tumors of the jaws, providing current data for interventions in the practice of oral surgeons and diagnoses where complications may arise requiring surgical treatment. The OPG/RANKL system has been studied in relation to radicular cysts of the jaws, and the correlation between them and markers of bone metabolism and leukocytes has been explored. A rare case of a peripheral osteoma of the mandible has been described. Histological changes in the border area after in vivo cutting of bone with an ultrasound device and Er YAG laser during extractions of impacted wisdom teeth in the mandible have been evaluated.
- Scientific research related to CNS tumor pathology: cases of mixed-papillary ependymoma in adult patients and children have been reported, a pediatric case of a solitary neurofibroma of the cauda equina, and a rare case of an intramedullary meningioma in the lower thoracic region has been described. A literature review has been conducted to investigate some important characteristics of sporadic spinal schwannomas and neurofibromas associated with neurofibromatosis type I and II.
- Research related to gynecological pathology: the role of E-cadherin in the progression of ovarian carcinoma has been studied immunohistochemically and in relation to epithelial-mesenchymal transition (EMT); studies on the pathology of endometriosis, endometrial carcinomas, and carcinosarcomas, including the expression of HIF1 alpha, Ki 67, E-cadherin, β -catenin, SMA in ovarian and endometrial carcinomas.
- Breast pathology: a study of E-cadherin in benign surgical diseases of the breast has been conducted, comparing its expression in patients with breast carcinoma.
- Gastrointestinal tract pathology: the immunohistochemical expression of transcription factors Snail and Twist in patients with gastric cancer has been studied to find a correlation between their expression and clinical and pathological characteristics; the

correlation of E-Cadherin and Vimentin expression with tumor cell differentiation has been investigated.

- Tumor progression in malignant tumors of the colon: the prognostic value of p53 and Ki67 in patients with colorectal carcinoma has been studied; the relationship between the expression of the molecular marker P504S and median survival in these patients, as well as long-term outcomes in cancer patients operated on for intestinal obstruction, has been explored.
- Pathology in orthopedics and traumatology: morphological changes in the tenosynovial tissue of patients diagnosed with idiopathic carpal tunnel syndrome have been described.
- Case studies: interesting cases of pleomorphic adenoma in the sinonasal area diagnosed as malignant melanoma; undifferentiated pleomorphic sarcoma of the breast; dirofilariasis with rare localization in the scrotum; a forensic case of acute encephalopathy with subdural and retinal hemorrhages in a child; Ewing's sarcoma affecting the spine have been described.
- Pedagogy: useful pedagogical methods and practices in medical education have been described, highlighting the importance of clinical-anatomical conferences in the education of medical students.

IV. Evaluation of the Monographic Work

Associate Professor Poryazova's monograph is dedicated to the expression of E-cadherin, metastases, and tumor progression: Poryazova-Markova E.G. "E-cadherin - metastasis, tumor progression, clinical-morphological aspects," published by Lax Book, Plovdiv, 2024, 140 pages, ISBN: 978-619-189-237-2. The monograph discusses current biological mechanisms in the progression and metastasis of malignant tumors. It is written in 140 pages and has two reviewers. Based on the immunohistochemical expression of E-cadherin, a parallel is drawn with clinical-morphological characteristics. Contemporary aspects, molecular and functional signatures of epithelial-mesenchymal transition (EMT) are discussed. E-cadherin (epithelial cadherin) is essential for maintaining the epithelial integrity of differentiated epithelial tissue. It is known that the loss of epithelial differentiation in carcinomas is associated with abnormal, limited expression of E-cadherin, which is a hallmark of EMT.

Based on years of experience, morphological differences and intimate mechanisms of transdifferentiation of common malignant tumors with various localizations - in the breast, stomach, colon, endometrium, and ovaries during metastasis and progression have been studied. Histological and molecular classifications of these tumors with their morphological features are briefly presented. Based on modern diagnostic standards and good medical practice rules, the monograph will enrich knowledge about molecular-genetic mechanisms and carcinogenesis. The topic of epithelial-mesenchymal transition (EMT) is relevant in studying tumor metastases. The role of EMT in drug resistance has been repeatedly confirmed, making the monograph interesting, relevant, and useful for morphological and oncological practice.

V. Reflection (Citation) of the Candidate's Publications in National and Foreign Literature (Publication Image)

The evidence presented by Associate Professor Poryazova confirms a significant number of citations in prestigious scientific journals abroad. The scientific works have been cited a total of 72 times, and 39 of those citations are in journals with Impact Factor (IF); h-index – 5 (Scopus); 6 (Web of Science).

VI. Comprehensive, Qualitative Assessment of Educational and Methodological Activities, Including Scientific Supervision of Students, PhD Candidates, and Trainees.

Associate Professor Poryazova has been a long-standing university lecturer at the Medical University of Plovdiv. She conducts lectures and exercises for students in Bulgarian and English for students in medicine, dental medicine, and pharmacy. She participates in examination committees for conducting semester exams and is involved in the education and exams of students under the Erasmus program. She is actively engaged in the training of residents, conducting their colloquia, and is a member of the state examination board for specialization. She has been a scientific supervisor for two successfully defended PhD candidates and is the scientific supervisor for a third PhD candidate.

According to the presented report on teaching workload, Associate Professor Poryazova significantly exceeds the mandatory load, with more than 400 teaching hours each of the three academic years, and her extracurricular workload exceeds 170 hours.

Associate Professor Poryazova participates in the competition with an impressive number—5 university textbooks on General and Clinical Pathology, 4 of which are in English:

1. Lecture Course in General Pathology for Medical Students, First Edition, E. Poryazova, MD, PhD, et al. Publishing House Lax Book, Plovdiv, 2017, 144 pages, ISBN: 978-619-189-058-3
2. Lecture Course in Clinical Pathology for Medical Students, First Edition, E. Poryazova, MD, PhD, et al. Publishing House Lax Book, Plovdiv, 2017, 230 pages, ISBN 978-619-189-071-2
3. Lecture Course in General and Clinical Pathology for Dental Students, First Edition, E. Poryazova, MD, PhD, et al. Publishing House Lax Book, Plovdiv, 2017, 253 pages, ISBN: 978-619-189-066-8
4. Handbook of Histopathology and Immunohistochemistry, E. Poryazova, Publishing House Lax Book, Plovdiv, 2016, 158 pages, ISBN: 978-619-189-046-0
5. Textbook on General and Clinical Pathology for Pharmacy Students, B. Anavi, V. Belovezhov, D. Staribratova, E. Poryazova, S. Genova, Il. Bivolarski, V. Danev, Zh. Peshev, G. Ivanov, TAFPRINT Ltd., 2021, 193 pages, ISBN: 978-619-7091-15-1

Associate Professor Poryazova also participated in the development of 9 university notebooks.

VII. General Assessment of the Candidate's Compliance with the Minimum National Requirements under Article 2b, Paragraphs 2 and 3, and the Requirements under Article 2b, Paragraph 5 of the the Law for the Development of Academic Staff in

Bulgaria and the Specific Requirements for Medical University—Plovdiv for Clinical Activity Units, as specified in the Regulation for Academic Development at the Medical University—Plovdiv.

Associate Professor Poryazova meets the national requirements and specific criteria for occupying the academic position of Associate Professor, as defined in the Law for the Development of Academic Staff in Bulgaria, the Regulation for its implementation, and the Regulation for Academic Development of the Medical University—Plovdiv, with a total score of 3953.34 against a required 1240.

- In Group A Indicators, the candidate has completed a doctoral dissertation and meets the required 50 points;
- In Group B Indicators, from the mandatory 100 points, the candidate presents a habilitation work – a monograph, meeting the required 100 points;
- In Group C Indicators, from the mandatory 250 points, the candidate presents 20 articles in Web of Science and Scopus and 25 publications in non-refereed peer-reviewed journals, as well as 6 chapters from a collective monograph, accumulating 501.34 points;
- In Group D Indicators, with the required number of points for professor being 300, Associate Professor Poryazova presents materials with a scientometric total of 1080 points;
- In Group E Indicators, from the mandatory 140 points, Associate Professor Poryazova has 405 points;
- In Group F Indicators, from the mandatory 400 points, Associate Professor Poryazova has 1817 points.

VIII. Conclusion

After reviewing the presented scientific works and other documents, and as a result of the above, I believe that Associate Professor Poryazova meets the cumulative national criteria and indicators for the academic position of Professor, according to the Law for the Development of Academic Staff in Bulgaria, the Regulation for its implementation, as well as the specific requirements of the Regulation for Academic Development of the Medical University—Plovdiv. The comprehensive analysis of her scientific and teaching activities gives me grounds to state my positive assessment and confidently recommend to the respected Scientific Jury to award Associate Professor Elena Galabova Poryazova-Markova, MD, PhD, the academic position of "Professor" in the scientific specialty of Pathological Anatomy and Cytopathology, professional field 7.1 Medicine, higher education area 7. Health and Sports, for the needs of the Department of General and Clinical Pathology, Faculty of Medicine, Medical University- Plovdiv.

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