

REVIEW

By Assoc. Prof. Dr. Vera Borisova Krumova, DMD, PhD

Faculty of Dental Medicine , MU - Sofia

appointed as an external member of the Scientific Jury

with order № P-109-107/29.01.2025 of the Rector of MU -Varna

Subject: Competition for the academic post of "Professor" in the field of Higher Education: 7. Health care and Sport, professional field 7.2. Dental Medicine, scientific specialty "Orthodontics" for the needs of the Department of Orthodontics - FDM - MU - Varna, announced in Official Gazette No. 101/29.11.2024.

The review was prepared on the basis of the Academic Staff Development Act in the Republic of Bulgaria (ASDA), the Regulations for the Implementation of the ASDA and the Regulations for the Conditions and Procedures for the Acquisition of Scientific Degrees and for Holding Academic Positions at MU Varna. It is written and submitted on the basis of the Order No. P-109-107/29.01.2025 of the Rector of MU - Varna for the appointment of members of the Scientific Jury in the competition for the position of AD "Professor" in the scientific specialty "Orthodontics" and Protocol 1 from the First Meeting of the Scientific Jury.

One candidate submitted the required documents for the competition within the prescribed deadline: **Assoc. Prof. Dr. Hristina Ivanova Arnautska PhD**, Associate Professor in the Department of Orthodontics, FDM Varna. For the competition all the necessary documents have been submitted in accordance with the requirements of the Law on Academic Staff Development, its Implementing Regulations and the Regulations on Academic Staff Development of MU - Varna.

I. Biographical data and professional development of the candidate:

Assoc. Prof. Dr. Hristina Arnautska was born in 1974 in Varna. In 1993, she completed her secondary education at the Natural Sciences and Mathematics High School in Varna and

completed her studies at the Faculty of Dentistry at the Medical University of Sofia in 1999, earning a Master's degree in Dentistry. From 1999 to 2006, she worked as an orthodontist at Dental Center I EOOD in Varna, and in 2001, she enrolled in a specialization in Orthodontics. From 2008 to 2016, Assoc. Prof. Arnautska held the academic positions of "Assistant Professor" and "Senior Assistant Professor" at the Department of PDM and Orthodontics in the Faculty of Dentistry at MU-Varna. In 2016, she earned her educational and scientific degree of "Doctor," was appointed to the academic position of "Associate Professor," and became the first Head of the Department of Orthodontics at the Faculty of Dental Medicine at the Medical University of Varna, serving in this role from 2016 to 2024.

Assoc. Prof. Hristina Arnautska, PhD, acquired the specialty in "Orthodontics" in 2006. In 2011, she earned an additional qualification as a Master in Health Management from the Medical University of Varna. In 2013, she successfully defended her dissertation, titled "Diagnosis and Prediction of Canine Teeth Retention," and was awarded the educational and scientific degree of "Doctor." Throughout her professional development, Assoc. Arnautska has participated in numerous training programs and continuous education courses. She has a total of 24 years and 3 months of work experience, including 16 years and 5 months of teaching experience, as of the date the certificate was issued by MU Varna for the purpose of the competition.

She is a member of the World Federation of Orthodontics, the European Orthodontic Society, SIDO - the Italian Orthodontic Organization, the Bulgarian Orthodontic Society, the Lingual Orthodontics Club, the Bulgarian Dental Association, BIOMEDE and the Union of Scientists in Bulgaria. She is a member of the ethics committee of the Bulgarian Dental Association, Varna. She is fluent in English and Russian.

From the presented documentation her upward career development and her participation in a number of scientific societies is clearly visible.

II. Teaching and expert activity of the candidate

Assoc. Prof. Dr. Hristina Arnautska actively participates in the creation and updating of the lecture programs, the programs for practical training in the discipline "Orthodontics", as well as the corresponding syllabus for the semestrial and state examinations. During the whole period

of teaching as a non-habilitated lecturer, she was a member of the examination committees in Orthodontics for the 5th and 6th year of bulgarian and english-speaking students, and now as a habilitated lecturer she participates in the semestrial and state examinations as the Chair of the respective committees.

Assoc. Prof. Dr. Hristina Arnautska is the supervisor of the specialization of eight graduate students, six of whom have successfully acquired a specialty in Orthodontics and two are continuing their training.

Six PhD students have successfully defended their scientific theses under her supervision.

The teaching workload fully meets the requirements for teaching according to the regulations of MU Varna. Assoc. Prof. Hristina Arnautska has also been a member of scientific juries for awarding educational and/or scientific degrees and for acquiring academic positions. She participated in the competition for Associate Professor with 2 reviews, in the competition for Senior Associate Professor with 1 review and 2 opinions, and in the competition for Senior Assistant Professor, where she served on 9 juries. Additionally, she was part of the jury for PhD defenses, contributing 1 review and 7 opinions. Since 2012, she has annually participated as a juror in the "Prof. Mutafchiev" competition for the best student paper on an orthodontic topic.

Assoc. Prof. Dr. Hristina Arnautska is a member of the research team of the completed project number 20011 "Study of vestibular function with the method of static and dynamic posturography in patients with craniofacial deformities", funded by the "Science" fund of MU Varna, in the position of "Researcher", according to the contract reg. N:FH-4/26.01.2021.

She is also a member of the research team of the still active project No. 21006, winter session Science Fund 2021 - 26.04.2022 - 26.04.2025 on "Investigation with a rhinomanometer of the characteristics and quality of nasal breathing in patients with obstructive sleep apnea and snoring proposed for conservative treatment with intraoral devices".

III. Research activities

The overall publication activity of Assoc.Prof. Arnautska, which is reflected in the academic reference prepared by the Library of MU Varna, shows consistency and diverse interests in the development of scientific publications from the beginning of her teaching activity until now.

The candidate has co-authored 93 articles published in national and international journals. Assoc. Prof. Arnautska contributed with one dissertation thesis, in connection with the defended educational and scientific degree "Doctor" (2013), two monographs - habilitation theses ("Diagnosis and treatment approaches to the deviation in the eruption of permanent teeth" from 2015 and "Postnatal development of the maxillofacial region and prevention of orthodontic deformities" from 2024). She has been involved in the publication of two syllabus (2016 and 2018, published in Bulgarian and English) and 101 citations in refereed and non-refereed journals. A similarity check in scientific databases found no plagiarism in the candidate's scientific works.

The high scientific activity is also reflected in a number of national and international congresses and symposia - a total of 67 issues, some of which have been published in refereed and non-refereed journals.

1. Science metrics and meeting minimum national requirements (MNRs)

In the competition, the candidate participates with the following scientific works after holding the academic position of „Associate Professor”

- 1 dissertation on "Diagnosis and prediction of canine teeth retention" from 2013.
- 1 independent monograph "Postnatal development of maxillofacial region and prevention of orthodontic deformities" since 2024.
- 23 real publications, 9 of them in refereed journals in world databases WOS and Scopus and 14 in non-refereed peer-reviewed journals
- Full-text publications beyond the minimum scientific metric requirements for AP "Professor" - 5
- Participation with lectures and oral presentations in scientific forums and congresses: national - 8 and international - 4; participation with poster presentations in 10 Bulgarian and 35 international congresses and forums
- The candidate has submitted 12 citations, 11 of them in Scopus and Web of Science and 1 citation in a monograph with a total of 175 points
- Impact factor after holding the academic position of Associate Professor - 3.11
- Participation in 1 project under Science Fund 2020

- Supervisor of 6 successfully defended PhD students

The presented academic report also includes the publications and citations with which the candidate participated in the competition for the academic position of "Associate Professor" and the scientific degree of "Doctor." It is evident that there is no duplication with the materials submitted for the competition for the academic position of "Professor."

1. Evaluation of the Contributions of the Scientific Works of Assoc. Prof. Dr. Hristina Arnautska

Assoc. Prof. Arnautska provides a thorough and clear self-evaluation of the contributions of her scientific works. The wide range of fields in which she works highlights her diverse interests and her dedication to improving diagnostic, prophylactic, and therapeutic approaches. The results she has achieved serve as a solid foundation for the scientific and research activities of her future postgraduate and PhD students.

The contributions outlined in the author's reference are particularly impressive due to the significant number of areas Assoc. Arnautska has investigated, all of which are highly relevant to clinical practice. Her main contributions are presented across 11 areas, in which she carefully analyzes the results obtained.

The research activity of Assoc. Prof. Arnautska is presented in a logical sequence, aligned with the works she has published. Of particular significance is the monograph "Postnatal Development of ENT and Prevention of Orthodontic Deformities." This monographic work consists of four chapters, as follows:

1. Prophylaxis in Orthodontics
2. Development of the orofacial complex
3. Factors affecting the development of the orofacial complex
4. Early treatment of specific malocclusions

Structured in this way, the monograph is designed for a broad audience, including dental professionals, students, and postgraduates. It presents a detailed and innovative approach to postnatal development and emphasizes the importance of early prophylaxis. In the preface, the monograph highlights the necessity of studying early development in the ENT field. For the first

time, it addresses the impact of genetic and epigenetic factors that influence the potential for early prophylactic interventions. The monograph introduces a fresh perspective for specialists by presenting comprehensive analytical and diagnostic-treatment methods for postnatal development of the PLH (presumably a specific dental condition). It provides detailed treatment recommendations for various types of occlusal disorders during stable provisional and mixed dentition.

It is well illustrated with a wealth of personal clinical material, which is motivating for the choice of treatment approaches. I believe that this scientific work enriches with its presentation the most up-to-date orthodontic achievements and enables each specialist to search for individual approaches to treatment.

In the other areas the scientific contributions are also of extremely high value.

-In several publications, Assoc. Prof. Arnautska has thoroughly investigated two of the most significant etiological factors: caries (in articles 7.1. and 7.4.) and the premature loss of primary teeth (in articles 7.2., 8.10., 8.11., and 8.12.), both of which are major causes of dental discrepancies. The evidence presented strongly demonstrates their significant role in the development of dental arches and alveolar ridges.

Regarding the size of the dental arch in the medio-distal direction, the author highlights the presence of proximal caries and their complications as irreversible factors that lead to a shortening of the dental arch and medialization of the permanent tooth germs. More severe caries complications are also linked to the premature loss of primary molars, which results in underdevelopment of the alveolar ridge and a reduction in the space available for permanent teeth eruption. This analysis reveals that the complications arising from these two etiological factors are irreversible, requiring prolonged orthodontic treatment and sophisticated instrumentation.

It is particularly important to overlap these contributions in the training of the undergraduate and postgraduate students in an innovative scheme in the curriculum. The attitude of dentists towards these important aetiological factors is also crucial. In the scientific classification, these methods of application are subject to preventive and remedial prophylaxis.

- New data and approaches have also been analysed to investigate the relationship between temporo-mandibular, cranio-mandibular dysfunctions and occlusion (articles 7.3, 8.2 and D3). The correlation found between the three indicators is a significant contribution with practical implications for their treatment.

- I would also like to highlight the undisputed results with significant contributions on the etiological factor of the harmful habit of mouth breathing (articles 7.5, 7.6, 7.8, 7.9 and 8.6) and obstructive sleep apnoea in children and adults (OSA) (articles 7.7 and 8.8). She addresses both prevention methods and early treatment options in great depth in a number of her publications.

- For the first time in our country Assoc. Prof. Arnautska systematically discusses the results of the complex treatment of the defects in the TMJ with the application of orthodontic methods and means for the restoration of the basic functions - speech and masticatory in patients with combined TMJ defects. (article 8.1.)

- Very important for the orthodontic practice are the publications related to approaches regarding combined treatment of impacted teeth, which is crucial for the final alignment of dental arches (articles 8.3, 8.4, 8.5 and 8.9). These publications are of great clinical contribution in the conduct of complex orthodontic-surgical treatment of different groups of impacted teeth.

- A very important innovative contribution with clinical relevance is the detailed application of different materials for the restoration of the alveolar bone volume and the study of the anatomical variations of the maxillary sinus. (Articles 8.7. and D1)

- A significant contribution is also made by the publications examining the relationship between discrepancies and posturology (articles 8.13, D4, and D5). This provides the opportunity to establish new approaches in early prevention and treatment.

- Last but not least in importance is the analysis of the practical application of orthodontic biomechanics and the use of mini implants for the successful closure of edentulous spaces in the posterior segment of the mandible (articles 8.14 and D2).

The scientific publications submitted by Associate Professor Arnautska for the competition have the following authorship distribution: Co-authored in 28 publications, of which:

- First author – in 1 publication
- Second author – in 12 publications
- Third author and beyond – in 15 publications

IV. Overall evaluation of the presentation of Assoc. Prof. Dr. Hristina Arnautska, PhD

The teaching and research activities are illustrated in the Table 1.

Table 1 Fulfilling the minimum requirements for the position of „Professor”

Groups/Indicators	Requirements (works)	Requirements (points)	Implementation (points)
A/Indicator 1	Doctoral dissertation before associate professor	50 p.	50 p. Before Associate Professor
B/Indicator 3	Habilitation thesis - monograph	100 p.	100 p.
C/ Sum indicators 5-9	Total publications	200 p.	242.57
D/ Sum of indicators 10-12	Citations	100 p.	175 p.
E/ Sum of indicators from 13 to the end		100p. (≥ 80 points from indicator 14)	245 p. (160 points from indicator 14)
Total		550 p.	812.57p.

The data in the presented table clearly demonstrate the significantly higher indicators achieved by Assoc. Prof. Arnautska compared to the minimum requirements for the position of Professor. I would like to particularly highlight the notably high scores in groups E and F, which reflect the citations of her works in peer-reviewed journals and the PhD students she supervised who obtained the degree of Doctor of Education and Science.

V. Conclusion

In conclusion, I would like to reiterate the impressive upward trajectory of the candidate's career, from her appointment as Assistant Professor to her participation in the current competition for the academic position of Professor.

With relentless creative enthusiasm, she embarked on her journey in search of the most innovative methods, both in research and teaching, all while maintaining her inherent modesty and dedication.

I cannot help but feel proud that Assoc. Prof. Arnautska was an excellent student of mine at the Faculty of Dentistry in Sofia, and from that time, she has demonstrated a deep scientific interest in orthodontics.

With the establishment of the Faculty of Dental Medicine at MU Varna, Assoc. Prof. Arnautska won a competition in orthodontics and became the first assistant orthodontist in the Department of PDM.

Under my tutelage, she not only established herself as a teacher but also advanced significantly in her research career. Once again, I would like to emphasize her exceptional precision in the development of the monograph with which she entered the competition. As head of the Department of Orthodontics, Assoc. Prof. Arnautska also mentored a number of faculty members who successfully completed their specialization in Orthodontics and defended their dissertations at a highly innovative level.

In conclusion, I reaffirm that the scientometric data fully meet the requirements outlined in the Law on Scientific Degrees and Titles.

All of this gives me full grounds to confidently and firmly vote **YES** for the awarding of the academic position of "Professor" to Associate Professor Dr. Hristina Ivanova Arnautska

24.03.2025

Varna

Reviewer:

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