



**TITU MAIORESCU UNIVERSITY**

**BUCHAREST**

**DOCTORAL SCHOOL**

**MEDICINE**

## **ABSTRACT**

### **HABILITATION THESIS**

**Biological Variability in Health and Disease:**

**From Anatomy to Personalized Medicine**

**CANDIDATE:**

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**Titu Maiorescu University**

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The habilitation thesis entitled "*Biological Variability in Health and Disease: From Anatomy to Personalized Medicine*" has been prepared in accordance with the criteria and standards established by the National Council for the Attestation of University Degrees, Diplomas and Certificates, as well as the national legislation governing the habilitation process.

The first section presents my professional, teaching, and scientific activity to date, outlining the main stages of my academic career in chronological order and highlighting the contributions that have shaped my current research profile. It summarizes my main scientific achievements, representative publications, participation in scientific meetings, and the academic and managerial responsibilities I have undertaken within the University. It also highlights my involvement in the academic community and my continuous commitment to the development of higher education and research.

I graduated from the Faculty of Medicine of the "Carol Davila" University of Medicine and Pharmacy in Bucharest in 2006. My interest in the fundamental medical sciences developed during my first year of medical school, as I came to understand their essential role in building medical knowledge. The complexity of the human body and the importance of anatomy in understanding physiological and pathological processes became the main factors that guided my professional path toward this field from the very beginning.

This early interest strengthened my commitment to anatomy and morphological research, which have remained the focus of my academic, teaching, and scientific career. Between 2013 and 2017, I pursued my doctoral studies at Ovidius University of Constanța, where I obtained my PhD in Medical Sciences with the dissertation entitled "Normal Morphology and Anatomical Variations of the Arteries and Nerves of the Upper Limb," under the supervision of Professor Petru Bordei. The research conducted during my doctoral studies laid the foundation for my subsequent scientific work on anatomical variability and its implications for contemporary medicine.

My academic career began in 2010 within the Department of Anatomy and Embryology at the Faculty of Medicine, Titu Maiorescu University. Motivated by a continuous desire for professional development, I progressed through all academic positions, serving as teaching assistant (2010-2014), assistant lecturer (2014-2018), lecturer (2018-2025), and associate professor (2025-present). Each stage contributed to the consolidation of my teaching, research, and managerial experience.

Alongside my teaching and research activities, I assumed managerial responsibilities by coordinating the Department of Preclinical Disciplines, an important step in my professional development that enabled me to strengthen my skills in academic leadership, institutional management, and the coordination of educational and research activities. My work within the Cadaveric Material Management and Utilization Service also contributed to maintaining the resources required for practical anatomical training while ensuring compliance with the academic and ethical standards specific to anatomical education.

My research activity has resulted in the publication of ten academic books and 55 articles in indexed journals, participation in scientific conferences, and involvement in interdisciplinary research projects. My main research interests include clinical anatomy and morphological variability, biomarkers involved in cardiovascular disease, and the role of the microbiome in health and disease. Together, these research directions converge toward the contemporary concepts of personalized medicine and mechanism-based medicine.

The second section of the thesis focuses on my future professional development and research perspectives. Building on the results achieved so far, it presents the main research directions related to anatomical variations, biomarkers involved in predictive medicine, and the role of the microbiome in early biological programming and the pathogenesis of chronic diseases. It also outlines the development of an interdisciplinary research platform integrating expertise in anatomy, medical imaging, molecular biology, and computational analysis. In addition, this section discusses the objectives of expanding national and international collaborations, developing doctoral research activities, building competitive research teams, and translating research findings into high-quality scientific publications and competitive research projects with an impact on medical education and clinical practice. I believe that an academic career requires a balanced commitment to teaching, research, and management within an environment founded on integrity, scientific rigor, and collaboration. The education of students and future researchers, the promotion of interdisciplinary research, and the development of a culture of academic excellence represent essential components of academic activity and key prerequisites for the advancement of medical education and biomedical research.

The final section contains the references that supported the preparation of this thesis, reflecting the relevance and timeliness of the literature consulted and the integration of the most significant contributions in the fields of anatomy, biomedical research, and personalized medicine.