

**UNIVERSITY OF MEDICINE AND PHARMACY  
“CAROL DAVILA” BUCHAREST  
DOCTORAL SCHOOL  
DOMAIN MEDICINE**



**“Management of hypertension –  
from endothelium to target organ damage”  
HABILITATION THESIS ABSTRACT**

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The habilitation thesis entitled "Management of hypertension – from endothelium to target organ damage" underlines the ascension and continuous development of my academic activity, illustrating my main scientific, pedagogic, and professional achievements attained after obtaining the Doctor of Medicine Cum Laudae title. The work I reference in this habilitation thesis was published after the completion, in 2009, of the doctoral thesis on "Endothelial dysfunction in hypertensive diabetic patients – therapeutic implications". The habilitation thesis further addresses future directions of research, stemming from the main areas I have focused on thus far.

The *first section* chronologically presents my professional, academic, and scientific achievements. Also included is data on national and international scientific and academic recognition.

#### *Professional achievements*

The section offers a brief description and documentation on the evolution of my professional career in the field of cardiology and internal medicine, my personal contribution in research activity, and my involvement in advances in clinical cardiology. My multidisciplinary training in the field allowed for an integrated approach to hypertension pathophysiology. Through perseverance, rigorous training, and a personal drive to excel, I obtained accreditation as European Specialist in Arterial Hypertension. Being a member of the sole Center of Excellence in Hypertension accredited by the European Society of Hypertension in Romania, my research activity was facilitated to ascend on my professional path. Over decades, the clinical scenarios offered by the internal medicine ward in a multidisciplinary team of well-trained colleagues caring for a large number of emergency patients suffering from complex diseases paved the way to professional maturity.

My professional prestige grew while holding the position of Secretary for the Hypertension Work Group of the Romanian Society of Cardiology during two consecutive terms, followed by election as President of the same work group. I am currently a Board member for the Romanian Society of Cardiology, with an executive position as Board Secretary. Aiming for continuous improvement and international recognition I was granted Fellow of the European Society of Cardiology in 2011.

Becoming Head of the Internal Medicine Clinic required advanced management of the medical resources and staff in a highly complex department, a position I held with great

responsibility, which necessitated administrative and managerial skills concordant with the profile of the Bucharest Emergency Clinical Hospital, the largest emergency hospital in the country. Between 2014 and 2015 I held the position of Secretary of the Internal Medicine Commission of the Ministry of Health, the decision forum for residency curriculum and board examinations.

#### *Academic achievements*

I entered "Carol Davila" University of Medicine and Pharmacy in Bucharest in October 1997 as a teaching assistant of the Internal Medicine and Cardiology Clinic of the Bucharest Emergency Clinical Hospital. My academic ascent included the gradual promotion to Senior Lecturer, and later Assistant Professor. During this time my academic activity targeted medical students and resident doctors in training. I have vigorously trained and guided internal medicine internships for many generations of residents from different specialties, I have successfully guided scientific research of students and residents, and I have rigorously scrutinized study designs of bachelor theses, and many scientific papers presented in numerous national and international scientific events. The model at the base of my academic and professional development intertwines five important principles – investing in research, developing human resources and infrastructure, dedication to university education, stimulation of knowledge beyond classical education, and collaboration with other medical and non-medical fields. As part of my teaching activity, I authored and co-authored several chapters dedicated to students, residents, and specialists, as part of books of national and international circulation.

#### *Scientific achievements*

This part highlights the scientific contribution to research in the field of hypertension, diabetes, dyslipidemia, and atherosclerosis, major components of my activity. I conducted both fundamental research investigating the cellular mechanisms involved in atherosclerosis, and also clinical research, especially in the field of hypertension and other major cardiovascular risk factors.

An essential research topic was addressed by projects whose main interest was the mechanistic study of atherosclerosis onset and progression in the vascular endothelium, personally focusing on aspects directly affecting clinical and pharmacological management of hypertension and other cardiovascular risk factors. I thus studied various strategies to reverse endothelial dysfunction, in both animal models and cardiovascular patients. Zooming out from

microvascular lesions, I went to investigate hypertension in a broader, primarily epidemiological context, studying its prevalence in the general population, alone and in association with other cardiovascular pathologies, and in a descriptive manner, detailing subgroups of specific clinical scenarios and therapeutic managements.

The experience thus gained allowed me to participate in national and international research competitive grant projects, as either director or responsible for partner. In the development of my academic career, I found communication with teams of common research interest of utmost importance. This made multidisciplinary collaboration possible, and was materialized in publications in the form of ISI articles or others indexed in international databases.

The *second section* of the habilitation thesis focuses on future research objectives that harmoniously integrate areas of professional and academic interest with previous scientific experience. I will approach two research topics where many scientific questions still remain unanswered: 1) hypertension mediated target organ damage in conditions of acute increases in blood pressure, along with pathophysiological, clinical, and prognostic definitions of the acute hypertensive heart, and 2) hypertension-induced arrhythmogenesis in relation to the circadian blood pressure profile.

From a professional point of view, I will evolve respecting the highest scientific standards, by perfecting my own education. I will also continue to emphasize institutional multidisciplinary collaboration.

I consider that throughout my career I have passed on, with intrinsic dedication and motivation, to generations that have followed, my inclination towards clinical practice and the desire for knowledge and recognition in scientific research. I participated in the formation of a team of young and ambitious young doctors, with whom I plan to carry on the vision of developing a department of clinical and scientific excellence. With their collaboration we have already educated generations of students and residents, we have carried out research projects, and we have strengthened relationships with valuable partners in academia. I aim to grow professionally and to influence the university environment in a direction that respects the principles of professionalism and responsibility towards medicine, in all its aspects.

The *third section* contains bibliographic references, generally describing the evolution of my career from a professional, academic, and scientific point of view, supported by the most important articles and activities described in the first part.