

HABILITATION THESIS SUMMARY

OLD AND NEW CHALLENGES IN INFECTIOUS DISEASES

Associate Professor Ștefan Ion, MD, PhD

Professional, Academic, and Institutional Career

The habilitation thesis of Associate Professor Ștefan Ion presents the development of a career built at the intersection of clinical practice in infectious diseases, military medicine, university teaching, applied research, and healthcare management. The document highlights the continuity between bedside experience, the formulation of relevant research questions, the dissemination of findings through publications and monographs, and their integration into the training of medical students and residents. The career pathway described demonstrates the professional and scientific maturity required to lead independent projects and supervise future doctoral candidates.

Military medical training and specialization in infectious diseases were complemented by further training in parasitology and tropical diseases, travel medicine, and health services management. A defining milestone was participation in the United Nations UNAVEM III mission in Angola in 1995–1996, as Head of the Infectious Diseases Department of the Romanian Field Hospital in Viana. The experience gained in a malaria-endemic region subsequently provided the basis for the doctoral thesis, publications on antimalarial prophylaxis and treatment, and the two editions of the monograph devoted to malaria. Clinical work at the “Dr. Carol Davila” Central Military Emergency University Hospital, including service as Head of Department from 2008 to 2022, strengthened skills in coordination, decision-making, and multidisciplinary collaboration. The academic career, begun in 2016, was confirmed by promotion to Associate Professor in 2024. Professional and scientific recognition is reflected in military and medical distinctions, election as an associate member of the Academy of Romanian Scientists in 2026, and the award of the “Ion Moraru” Prize for the monograph “Malaria. Second, Revised and Expanded Edition.”

Major Scientific Contributions

The principal scientific direction, malaria and tropical diseases, draws on direct clinical experience in Angola and transforms it into a coherent programme of research, education, and prevention. Contributions addressed the selection of chemoprophylaxis in chloroquine-resistant areas, the role of mefloquine in the epidemiological context of the period, the early diagnosis of imported malaria, and the use of artemisinin-based combination therapies to limit the emergence of resistance. The doctoral thesis systematized the principles of prophylaxis, diagnosis, and treatment according to geographical area and resistance profile. The monographs published in 2015 and 2024 transferred this experience to the medical community and helped sustain interest in tropical medicine and travel medicine in Romania.

In viral hepatitis, the author's work spans almost the entire modern evolution of antiviral therapy. Research included quantitative HBsAg measurement and the use of biomarkers to predict response in hepatitis B, non-invasive assessment of fibrosis using scores such as FIB-4, evaluation of peginterferon and ribavirin therapy, experience with boceprevir, and the transition to interferon-free direct-acting antiviral regimens. Participation in clinical trials and real-world studies demonstrated the efficacy of the new regimens, while also underscoring the need to monitor patients with advanced fibrosis or cirrhosis. This direction was complemented by a study of hepatitis E seroprevalence in the Romanian adult population and by the documentation of concomitant acute infection with hepatitis A, B, and E viruses.

Research on HIV infection reflects the transition from treating advanced immunodeficiency to managing a chronic condition, with emphasis on modern therapies, comorbidities, quality of life, and early diagnosis. The introduction of integrase inhibitors, associated malignancies, cardiovascular risk, and severe infectious complications in immunocompromised patients were examined. Participation as principal investigator in the European #aware.hiv project represents the current stage of this research direction. The project promotes indicator-condition-guided HIV testing, the identification of missed diagnostic opportunities, the use of electronic alerts, audit and feedback, staff education, stigma reduction, and rapid linkage to care. Through this approach, the research moves beyond observation and seeks sustainable changes in institutional practice.

In extrapulmonary tuberculosis, the contributions emphasized the difficulty of diagnosis in immunocompetent patients, the frequently paucibacillary nature of the disease, and the importance of selecting the appropriate biological specimen. Cases of peritoneal tuberculosis and cervical lymphadenitis demonstrated that initially negative microbiological results do not exclude the disease, and that a discordant clinical course requires clinical, histopathological, and molecular reassessment. In infective endocarditis, the research evolved into a complex institutional platform addressing local aetiology, prosthetic valve endocarditis, histopathological features, and forms associated with drug use. The findings support adapting empirical therapy to local epidemiology, early medical-surgical assessment, and the operation of a multidisciplinary team bringing together infectious diseases, cardiology, cardiovascular surgery, microbiology, and pathology.

Studies on urinary tract infections identified factors involved in recurrence and in the selection of multidrug-resistant uropathogens, particularly among older and postmenopausal women. Urinary catheterization, previous antibiotic therapy, multiple recurrences, diabetes, chronic kidney disease, and urological procedures are important elements in risk assessment. The results support a rapid transition from empirical to targeted therapy and de-escalation once microbiological data become available. These studies form part of a broader focus on antimicrobial resistance and antimicrobial stewardship, including surveillance of antibiotic consumption, diagnostic stewardship, prevention of the transmission of resistant microorganisms, and application of the One Health perspective.

The neuroinfection research direction completes the interdisciplinary profile through studies and case reports on tick-borne viral encephalitis, associated epileptic seizures, post-

COVID-19 neurological manifestations, disseminated nocardiosis with cerebral involvement, and invasive mucormycosis. These contributions highlight the importance of correlating the clinical picture with imaging, neurophysiological, microbiological, and immunological investigations, as well as the need for long-term monitoring of neurological sequelae.

Academic and Scientific Development Plan

The proposed academic development plan represents a natural continuation of the work already undertaken. Habilitation will enable integration into a doctoral school, supervision of doctoral candidates, and the formation of an independent academic team. Teaching will be modernized through curriculum updating, competency-based education, interactive methods, clinical cases, simulation, and digital resources. A distinct direction is the development of courses in tropical diseases and travel medicine, together with the mentoring of students, residents, and early-career researchers.

Future scientific priorities include establishing prospective registries for imported malaria, infective endocarditis, urinary tract infections, and neuroinfections; expanding research on viral hepatitis and HIV infection; strengthening stewardship programmes; and developing One Health projects. The plan provides for secure data infrastructures, access to molecular diagnostics, statistical and bioinformatics support, multicentre collaborations, grant acquisition, and an increase in publications in internationally visible journals. Digitalization will support both education and research through interoperable databases, clinical alerts, dashboards, predictive models, and decision-support tools, used in accordance with ethics, confidentiality, and academic integrity.

Conclusion

In conclusion, the thesis demonstrates the coherence of a professional trajectory in which clinical practice generated research topics, research produced findings with direct applicability, and these findings were transferred into medical education and the organization of care. The diversity of the fields addressed is unified by several constant principles: early diagnosis, individualized treatment, responsible antimicrobial use, multidisciplinary collaboration, and patient-centred medicine. Clinical experience, scholarly publishing, participation in multicentre studies, managerial capacity, and teaching involvement support the author's potential to lead independent research and train a new generation of physicians and researchers in infectious diseases.