

**"VICTOR BABEȘ" UNIVERSITY OF
MEDICINE AND PHARMACY TIMIȘOARA
DOCTORAL SCHOOL
MEDICINE DOMAIN**



**ORTHOPEDICS AND TRAUMATOLOGY - FROM
CAST IMMOBILIZATION TO REGENERATIVE MEDICINE
AND TISSUE TRANSPLANT SURGERY**

ABSTRACT

Prof. Univ. Dr. Tatu Romulus - Fabian

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The habilitation thesis entitled **ORTHOPEDICS AND TRAUMATOLOGY - FROM CAST IMMOBILIZATION TO REGENERATIVE MEDICINE AND TISSUE TRANSPLANT SURGERY** describes the results of my scientific, academic and professional activity since 1991, the year of my access to the teaching staff of the Medical School of Timisoara, together with the directions of academic career development and scientific research in the coming years. The paper is elaborated according to the recommendations of the Ministry of Education and Research no. 5,229 of August 17, 2020 as well as the Guide for the elaboration and drafting of the Habilitation Thesis within the Victor Babeş University of Medicine and Pharmacy from Timișoara, elaborated based on the CNATDCU recommendations. The thesis comprises four chapters: the first includes the presentation of scientific achievements and international visibility, the second and third refer to academic and professional achievements, respectively, and chapter four presents the plans and prospects for teaching and scientific career development. At the end I included the bibliographic references.

1. SCIENTIFIC ACHIEVEMENTS AND INTERNATIONAL VISIBILITY

After graduating from the Faculty of Medicine of the Institute of Medicine in Timisoara in 1990 and occupying by competition in 1991 the position of university preparator in the Discipline of Orthopedics and Traumatology of the University of Medicine and Pharmacy "Victor Babeş", I went through all stages of the university hierarchy becoming dated 21.09.2015, university professor. Since 2014, I lead the III-rd Orthopedics and Traumatology Discipline of the XV Department of Orthopedics - Traumatology, Urology and Medical Imaging. Between 1995 and 2001 I was a doctoral student in the Discipline of Orthopedics and Traumatology of the University of Medicine and Pharmacy "Victor Babeş", obtaining the title of Doctor of Medicine after the public defense on 27.04.2001 of the doctoral thesis entitled "Clinical and experimental considerations on appreciation of the evolution and therapeutic resolution of fractures". I became a specialist in Orthopedics and Traumatology in 1995 and a primary care physician since 1999. In 2000, I obtained certificates of competency in Hand Surgery and Arthroscopic Surgery. In the period 1995 - 2008 I carried out my professional medical activity within the I-st Orthopedics and Traumatology Clinic of the Timișoara County Clinical Hospital. The scientific research activity was also an important aspect of my professional activity and aimed at both the development of orthopedics and traumatology and interdisciplinary collaborations. I participated in 16 research projects, 3 international and 13 national, being project director for one of the national projects and member of the research teams for the others. The results of the research were communicated on the occasion of participation in conferences and have been published in a large number of articles, partly in ISI indexed journals, partly in BDI and in several monographs and have also made it possible to obtain a Patent. The

research activity materialized by publishing a number of 61 articles in-extenso of which 17 indexed ISI and 44 in other international databases (Pubmed, Scopus, Index Copernicus). There were also 143 abstracts published on the occasion of participation in international and national scientific events. Some of the published articles have been cited by other authors. I currently have a Hirsch index of 6 in Web of Science (167 citations) and an h-index of 7 in Scopus.

2. ACADEMIC ACHIEVEMENTS

During the advancement in the university hierarchy I crossed all the stages of the academic functions being university preparator in the period 01.10.1991 - 28.02.1994, university assistant between 28.02.1994 - 23.02.2009, then head of works from 23.02.2009 until 01.10.2011 when I became an associate professor. Since 21.09.2015 and currently I am a university professor in the XV Department of Orthopedics - Traumatology, Urology and Medical Imaging. Since 2010 I am the Head of the Discipline III Orthopedics - Traumatology with the headquarters within the Military Emergency Clinical Hospital "Dr. Victor Popescu" Timișoara. Throughout my 30-year university career I have trained a considerable number of students from the departments of: general medicine, colleges of balneo-physio-kineto-therapy and general medical care. Regarding the postgraduate training, I organized and supported as a lecturer a series of postgraduate courses listed and described in the thesis. Over time, I was part of many promotion commissions in the discipline of Orthopedics - Traumatology according to the decisions of the rector. I have been a referent in several doctoral commissions. I am a residency coordinator in the specialty of Orthopedics and Traumatology since 2014. The residents who have reached the Discipline III Orthopedics and Traumatology follow the training program in the specialty, benefiting from the conference lessons according to the topic as well as the practical internships.

3. PROFESSIONAL ACHIEVEMENTS

I started the residency in the specialty of Orthopedics and Traumatology by Order of the Minister of Health no. 1056 / 22.10.1991. During the training period, at that time of only 3 years, an overwhelming influence in my formation as a specialist in musculoskeletal surgery and the development of a mindset on the practice of this beautiful medical specialty, had the first three-month internship in the Clinic "Lorenz Bohler" From Vienna, led at the time by Mr. Prof. Univ. Dr. Johannes Poigenfürst, a European personality in musculoskeletal surgery.

In August 1992, I took part in the first knee arthroscopy course organized in Romania, in Bucharest. Two reference names from the USA were present, authors of

classic textbooks in the field, H. Sariaree and S. Samimi. So I laid the groundwork for what later became one of my main concerns among surgical techniques - knee arthroscopy.

On February 1, 1995, I was confirmed as a specialist in the specialty of Orthopedics and Traumatology and after five years of activity, as senior physician in the same specialty, following the examinations held for this purpose. With the legislation of certain surgical skills, due to the fact that I could prove, through certificates of participation in courses and internships in European clinics, the fulfillment of the necessary conditions to obtain these skills, I was among the first doctors certified: Competence in Arthroscopic Surgery and Competence in Hand Surgery.

With the possibility to practice the specialty learned, I have developed a permanent concern for the improvement and modernization of surgical techniques already practiced, but especially for the introduction of new techniques, learned in internships in other clinics in the country and abroad. Thus, over time we have marked the introduction for the first time in the practice of local surgery and some even national techniques. Worth mentioning: the first reconstruction of a bone defect with bone matrix of hydroxylapatite and autologous stem cells, as well as tissue transplant activity. During this, we performed the first quadriceps tendon transplant and in another patient, the first Achilles tendon transplant, both with tissue from a deceased donor from the authorized tissue bank. We are among the few specialized services in the country accredited by the National Transplant Agency for bone, tendon and cartilage transplant activity.

I have established and organized from "zero" in 2007 the Clinical Department of Orthopedics and Traumatology in the Military Hospital Timisoara which became in 2012, the Clinical Department of Orthopedics and Traumatology with a capacity of 25 beds, base of physiotherapy and two modern operating rooms equipped to current standards. Throughout my career I participated in numerous examination commissions of the Ministry of Health as well as competition commissions of UMF Timisoara.

4. ACADEMIC CAREER DEVELOPMENT PLAN

The development of my future university career will take place in two main directions:

- **Didactic (educational) activity**

In order to satisfy the exigencies of a higher education able to align with the international standards, we followed the new tendencies manifested in the university pedagogy. At present at European level there is an almost unanimous approach to student-oriented medical education, with a major focus on the development of clinical skills during undergraduate studies. Given these aspects, I believe that the ways to acquire clinical skills must be included in an active process, in which learning is done through observation, the acquisition of procedural knowledge and the practical implementation of acquired skills. In order to develop the practical skills within our university, we participated in the organization

of courses for residents and specialists with an important emphasis on learning surgical techniques (hands on workshops).

- **Research activity**

The development of the research activity will focus, as before, on the participation in international and national specialized events, by publishing and disseminating research results and by collaborating and developing new methods and results in the field in research projects. Future research directions will focus on the following areas:

1. The use of stem cells in aseptic necrosis of the femoral head
2. Heterologous ligament transplantation in knee joint pathology
3. Use of advanced materials in orthopedics and traumatology.

The framework through which I propose to build my career is based on a set of values: feedback, transparency, openness to the new, communication, teamwork. I believe that the development of the field of orthopedics and traumatology, related fields, my career and collaborators are dependent on respecting and upholding these values.

The list of bibliographic references completes and concludes the habilitation thesis.