

**I founded at The “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca: The Discipline of Cell Biology (to become Discipline of Cell and Molecular Biology), The Center of Excellence of Molecular Medicine and also developed the Laboratory of Electron Microscopy.**

**I founded at The Cluj County Clinical Emergency Hospital: The Laboratory of Human Genetics (to become The First Laboratory of Genetic Explorations, accredited in 2013 as a “Research Unit of the Platform for Scientific Research of the Academy of Medical Sciences of Romania”.**

***a. Founding the Discipline of Cell and Molecular Biology, and the development of the Laboratory of Electron Microscopy of The “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca***

I made great efforts to build the laboratories necessary for the teaching and research activities of the Discipline, made myself the plans for the laboratories dedicated to practicals, as well as to research, struggled to achieve their building according to my plans, as well as to obtain laboratory furniture and modern equipment. In 1979 and 1980 the teaching and research laboratories of the Discipline of Cell Biology were built at the 3<sup>rd</sup> floor of the building belonging to the UMP Cluj-Napoca on 6 Pasteur St. (the so-called “old Pasteur building”). The laboratory installations (gas, electricity, water), the furniture in each lab according to the models conceived by me or seen at the Section of Cell and Molecular Biology (lead by Prof. George Emil Palade), Yale Univ., the equipment required for teaching (optical microscopes, centrifuges, chromatographic equipment) and research activities (modern microscopes made in Romania or imported from Germany, refrigerated centrifuges, electronic pH-meters), including high performance equipment (spectrophotometers, nuclear magnetic resonance spectrometer with a computing installation for data processing, electron spin resonance spectrometer) were completed. The spectrometers were obtained by personal efforts from the Ministry of Education and Teaching or by grants from the Academy of Medical Sciences. Consequently, since 1981 the Discipline provided very good conditions for teaching and research activities.

I brought hundreds of chemicals, a lot of laboratory consumables (glassware and plasticware, pipets and micropipets), other pieces of equipment, as well as dozens of books, thousands of reprints from England or USA, from donations and/or grants with British, American and Australian scientists (see the international cooperation in Gheorghe Benga’s CV).

I obtained equipment for the ***Laboratory of Electron Microscopy of UMP Cluj-Napoca***. From Chelsea College, Univ. of London I obtained a Hitachi HU-11 electron microscope in 1976 (installed in 1977), from Kings College in 2004 (installed in 2005) two Jeol electron microscopes (a scanning and a transmission EM), ultramicrotomes, etc.

Since 1998 the Discipline of Cell and Molecular Biology was accredited as Center of Excellence by the Senate of UMP Cluj-Napoca.

***b. Founding the Center of Excellence of Molecular Medicine, UMP Cluj-Napoca***

After 1990 I made great efforts for construction of a new building of The "Iuliu Hațieganu" UMP Cluj-Napoca on 6 Pasteur St., Cluj-Napoca, submitting in person a

Memorandum to the Ministry of Education and Teaching. Finally a new building was constructed (the so called “New Pasteur Building”) in which the top level was allocated for a Center of Molecular Medicine, inaugurated on December 16, 2002.

The building, the main installations and the laboratory furniture were funded by The Ministry of Education and Teaching. However, from grants obtained by myself were funded: the ventilation and air-conditioning instalations of the level, a cold room and the greatest part of the laboratory equipment: a Bruker minispec 20 NMR spectrometer, refrigerated centrifuges, a Sorvall 26 ultracentrifuge, an installation to prepare double distilled and ultrapure water, computers, equipment for nucleic acid and protein gel electrophoresis, installation for examination of electrophoretic gels in UV and visible light (coupled to a digital photographic camera and a computer with software for image processing), densitometer for quantification of components separated by thin layer chromatography and electrophoresis, equipment for molecular biology (thermocyclers etc), cell culture equipment, etc. When it was opened it was a modern CENTER, unique in Romania.

In 2006 it was accredited by CNCSIS (National Council of Higher Scientific Research) as a CENTER OF EXCELLENCE OF MOLECULAR MEDICINE AND NEUROSCIENCES.

### ***c. Founding the Laboratory of Human Genetics, Cluj County Clinical Emergency Hospital***

In 1978-79, in parallel with the organization of the Discipline of Cell Biology I founded a Laboratory of Human Genetics of the Cluj County Clinical Emergency Hospital (called today The First Laboratory of Genetic Explorations).

I made great efforts to build the laboratories in two stages of construction, first in the original location (Clinicilor St.), then, after movement, the building of the laboratories at the 3<sup>rd</sup> floor of the building belonging to the UMP Cluj-Napoca on 6 Pasteur St. (the so-called “old Pasteur building”).

I took care of the laboratory furniture and equipment, of the recruiting and training of the personnel who is performing the genetic analyses. After years of efforts we reach the stage when it is possible to perform all types of genetic explorations: cytogenetics, biochemical genetics and molecular genetics. For cytogenetics the determination of sexual chromatin (the Barr test), karyotyping with banded chromosomes and the study of chromosome Y (this for the first time in Romania) are performed.

We were in 1980’s the only laboratory in Romania in which biochemical genetic analyzes were performed (as appreciated by Acad. Ștefan Milcu, the former President of the Academy of Medical Sciences): diagnosis of aminoacidopathies, of some errors of sugar metabolism, of some lysosomal diseases etc.

I brought from USA, Germany and The Netherlands chemicals and materials, as well as the methodology of work that I learned there and trained the laboratory personnel to perform the analyses. The laboratory was visited by high rank officials from Romania (Acad. Ștefan Milcu, Acad. Nicolae Cajal), who expressed the most favourable opinions regarding the organization and activity of the Laboratory of Human Genetics.

Since 1990 it became The First Laboratory of Genetic Explorations of the Cluj County Clinical Emergency Hospital. In 2013 it was accredited as a “Research Unit of the Platform for Scientific Research of the Academy of Medical Sciences of Romania”.