On January 27, 1999, the prominent Ukrainian physiologist and gerontologist, Prof. Vladimir V. Frolkis, will mark his 75th birthday and 50 years of scientific activity. Frolkis is a Full Member of the National Academy of Sciences and the Academy of Medical Sciences of Ukraine, Vice-President of the Academy of Medical Sciences of Ukraine, Head of the Department of Biology of Aging and Chief of the Laboratory of Physiology of the Institute of Gerontology. Frolkis is one of the leaders of modern age-related physiology and gerontology. His name is linked with many new ideas about the essence of aging and age pathology formation, as well as the development of experimental approaches to lifespan prolongation.

Many young scientists, who, over time, founded a sound scientific basis for age-related physiology and gerontology, were attracted to Frolkis by the novelty of his ideas, his broad natural scientific approach, and the creativity of his mind.

Under his supervision, more than 100 dissertations, of them 46 doctoral, have been defended. Particular attention of Frolkis’s scientific school has been given to the neurohumoral mechanisms of aging. An in-depth analysis of the age-related changes in the nervous centers carried out by his research staff has revealed the dependence, at both direct and feedback control, of the above changes on disturbances occurring in transmitter and hormone metabolism and energetic processes, and on the cellular membrane state. The disciples of Frolkis now occupy positions as leaders of institutes and heads of departments and laboratories, and their work teams continue to contribute to further developing some of Frolkis’s ideas.

Frolkis participated in World War II. After graduation from the Leningrad Military-Medical Academy, he came to Kiev and passed a postgraduate education course at the Department of Normal Physiology at the A.A. Bogomolets Medical Institute, headed at that time by the academician G.V. Folbort, a follower of I.P. Pavlov. In subsequent years Frolkis worked in this department as an assistant, docent and professor. He was first to formulate a concept on the hemodynamic center, to establish the regularities of an interaction between the nodes of automatism in the heart, and to perform a detailed analysis of the functional and metabolic disturbances in experimental myocardial infarction.
Frolkis is one of the founders of the Institute of Gerontology, where his activities have contributed to research into the mechanisms of aging and longevity. He has developed the adaptive-regulatory theory of aging. According to this theory, along with the aging process there appears in the course of evolution an antiaging process – the vitauct.

He proposed a concept about the mechanisms of eta-genesis and age-related individual development encompassing a whole life course from conception to death; proved the crucial role of genic regulation changes in the mechanisms of aging; described in detail disturbances as various links of neurohumoral regulation; revealed changes developing with aging in cell reactions to neural and humoral influences, and dysregulations of the hypothalamic functions, and studied the development of the stress-age syndrome in aging.

More recently, he discovered a new class of intracellular plasma membrane regulators and called them the invertors, and proved their role in the aging process and in the age pathology onset.

The works of Frolkis are of great theoretical value for medical science. He has put forward the theory of uniformness of mechanisms responsible for the development of age-related pathology, as well as the concept of gene regulatory therapy, proving its effectiveness experimentally on an example of atherosclerosis. At the same time, his experimental works have great practical importance and they serve as the foundation of age-associated pharmacology. Under his supervision, new drugs have been synthesized, among them a new class of the antiarrhythmic agents, vasopressin inhibitors for treating coronary insufficiency, arterial hypertension, and radically new experimental approaches were developed toward lifespan prolongation (protein biosynthesis inhibitors, enterosorption) and genic therapy of atherosclerosis.

Frolkis’s research papers and lectures are noted for their remarkable brilliance and originality. He is the author of some 700 published works, including 25 monographs and 15 handbooks, which have been published in various countries. Under his editorship, the first national manuals in gerontology and biology of aging have appeared.

Frolkis is a State Prize Laureate in Science and Technology and the recipient of many awards, including the A.A. Bogomolets Award and the I.I. Metchnikov Award from the National Academy of Sciences of Ukraine, and the Fritz Verzar Medal. He is an honorary member of the national gerontological societies of many countries. Frolkis is, or has been, on the editorial boards of many national and foreign professional journals. He is a member of the International Parliament of Humanitarians.

Frolkis is an Honorary Scientist of Ukraine, a Merited Professor of the International Science Foundation. Frolkis is one of the academicians-founders of the Academy of Medical Science of Ukraine, and he has contributed greatly to its establishment and development.

V.V. Bezrukov