

Obituary

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photo by Franciszek Vetulani

PROFESSOR JERZY VETULANI (1936–2017)

Professor Jerzy Vetulani was born in Krakow on January 21st 1936 in the family of scientists of the Jagiellonian University. His father was an outstanding historian and theorist of canon law, and his mother was a biologist. He spent his childhood in Krakow and after the second world war attended the prestigious Nowodworski High School. In year 1952 he began his studies in biology at the Faculty of Biology and Earth Sciences of the Jagiellonian University. He graduated in 1957 obtaining master's degree in biology. In the same year he was employed in the Department of Pharmacology of the Polish Academy of Sciences as an assistant and at the same time he started a second study in chemistry at the Jagiellonian University. His academic career throughout the highly active scientific life was connected with the Institute of Pharmacology. He obtained Ph.D. degree in natural sciences in 1966 from Ludwik Hirszfeld Institute of Immunology and Experimental Therapy of the Polish Academy of Sciences in Wroclaw. In the same year he began his postgraduate training at the University of Cambridge in the United Kingdom, where he learned spectrofluorometric methods. After returning to Poland he introduced these at that time very innovative methods to study effects of psychotropic drugs on levels of biogenic amines in various rat brain structures. He studied the effects of neuroleptics, MAO and dopamine β -hydroxylase inhibitors on metabolism of biogenic amines. These issues were subject of his habilitation work, which he prepared before leaving for sabbatical in the USA in 1973. He joined laboratory of professor Frydolin Sulser at Vanderbilt University, where he spent two years working on the central mechanisms of action of antidepressants, and in particular on their effects on the noradrenergic system. The results of these studies were published in 1975 in the most influential scientific journal, Nature. This discovery led professors Vetulani and Sulser to formulate a „ β -downregulation” hypothesis on the mode of action of antidepressants.

After returning in 1976 to his laboratory Jerzy Vetulani obtained a D.Sc. (habilitation) degree from the Institute of Immunology and Experimental Therapy of the Polish Academy of Sciences in Wroclaw. In the same year, he assumed the leadership of the Department of Biochemistry in the Institute of Pharmacology of Polish Academy of Sciences. Professor Vetulani directed the Department for more than 30 years until 2007. In 1983 he obtained an associate professorship, and a full professorship in 1989. His research on antidepressants has become an inspiration to the Department of Biochemistry and many of the world's research centers. His research group focused on mechanisms of action of antidepressants and biochemical mechanisms of experimental "antidepressant" therapy. At that time a phenomenon opposite to " β -downregulation" was discovered – "upregulation" of the α 1-adrenergic receptor and accompanying increase in expression of the gene encoding this receptor and, on the other hand, decrease in density of α 2-adrenergic receptors. The results of these studies have allowed him to formulate a general hypothesis that antidepressant therapy leads to multidirectional and dynamic molecular changes in the brain adrenergic system and in result the adrenergic transmission is enhanced and therapeutic effects occur.

Jerzy Vetulani's scientific interests encompassed also mechanisms and potential therapies for drug addiction. Professor Vetulani with his team demonstrated for example that clonidine, calcium channel blockers (especially L-type channels) and tetrahydroisoquinoline derivatives inhibit morphine abstinence. Another important area of interest for Professor Vetulani was the dopaminergic system and its role in reward and drug addiction, as well as in neurodegenerative diseases, particularly in Parkinson's disease.

Professor Vetulani promoted nine doctoral students and four members of his team received D.Sc. degree (habilitation). Most of his pupils continue research work in the Institute of Pharmacology. His former cooperators are now professors and heads of four departments of the Institute. Their research interests are largely inspired by the ideas and experiences that have arisen and developed in collaboration with the professor Vetulani.

Professor Jerzy Vetulani also inspired the research of the entire institute as a Scientific Director of the Institute of Pharmacology from 1994 to 2002. He also was the Editor-in-Chief of the Polish Journal of Pharmacology and Pharmacy (now "Pharmacological Reports") and has contributed significantly to its scientific quality. After retiring prof. Jerzy Vetulani continued to work at the Department of Brain Biochemistry and was elected to the position of Vice-President of the Scientific Council of the Institute.

Scientific achievements prof. Vetulani are impressive. He was the author of about 240 original papers, 27 chapters in books, 13 books, and around 100 review papers and more than 90 popular science papers.

Recognition for the scientific achievements of prof. Jerzy Vetulani has found expression in a whole range of distinctions and honors awarded by various bodies and organizations. Professor Vetulani received a honorary doctorate of two universities. In 2004 he received the title from the Silesian Medical University and in 2008 from the Medical University of Lodz. In 1983 he received the prestigious international Anna-Monika Award for contribution to the understanding of the underlining neurobiological mechanisms of depression. He was a laureate of many national awards; two awards from the Scientific Secretary and three awards of the Medical Sciences of the Polish Academy of Sciences. In 2006 he was awarded the Jędrzej Śniadecki medal and the Nicolaus Copernicus Prize from the Polish Academy of Science and Art. He received the Prime Minister Award for his scientific achievements and the Knight's Cross of the Order of Polonia Restituta for outstanding contributions to Polish science in pharmacology.

Professor Vetulani was a member of the Polish Academy of Arts (since 1991) and the Polish Academy of Sciences (since 2008). He served as a secretary of the Committee of Physiological Sciences of the Polish Academy of Sciences (1978–1981) and chairman of the Committee of Neurobiology, Polish Academy of Sciences (2007–2011). He was a member of the Scientific Councils of the Institute of Pharmacology, Nencki Institute of Experimental Biology, and Mossakowski Medical Research Center of Polish Academy of Sciences. He was an active member of many national and international scientific societies: the Polish Neuroscience Society, the Polish Pharmacological Society, Polish Copernicus Society of Naturalists, the Warsaw Scientific Society, the Polish Society of Bioethics and the European College of Neuropsychopharmacology (ECNP) and the Collegium Internationale Neuro-Psychopharmacologicum (CINP).

He has collaborated with a number of research centers in Poland and abroad, of whom over 20 years of collaborative research of the Polish and Italian Academies of Science (PAN/CNR) with the Istituto di Biologia Cellulare e Neurobiologia

(IBCN) in Rome. This cooperation coordinated by him concerned research on neurobiological mechanisms of central nervous system pathology. This collaboration also included the extra-curricular interests of Professor Vetulani: monuments and the art of ancient Rome. He was a great expert and lover of the Rome. He was for many friends “cicerone” on Roman streets and churches and always found some interesting part of the city that he could tell the story of. He was in this an absolute master.

Professor Jerzy Vetulani was an outstanding and talented lecturer and academic teacher. These talents woke up quite late, around the year 2000. Initially he ran monographs on psychopharmacology at the Faculty of Biology and Earth Sciences and then he taught courses in neurobiology at the Medical School for Foreigners Collegium Medicum and for psychology students at the Departments of Psychology of the Jagiellonian University and Pontifical University of John Paul II in Krakow. Since 2007, he was employed as a professor at the Higher Vocational School of Malopolska in Krakow. Professor Vetulani possessed an extraordinary ability to give an inspirational and straightforward talks about the structure and functions of the brain. His lectures alongside the content were full of passion and anecdotes of all kinds. The students were fascinated by the intimacy and simplicity of his lectures on the complex and secret knowledge of the brain. As one of the few university lecturers, he conducted examinations personally without using popular test exams because he appreciated the conversation with the students and was curious about their way of thinking. The extraordinary ability to speak clearly about complex mechanisms of brain functioning has made him one of the most eminent popularizer of neuroscience in recent years in Poland. Since 1999 he has been promoting brain science as a lecturer at the annual Brain Week in Krakow, but also in other Polish cities. His lectures were attended by hundreds of listeners. He was also the organizer of “Science Café” – the monthly scientific meetings for the general public in the Polish Academy of Science and Arts. He also lectured for junior high school students. Over the last 15 years, he has delivered around 500 different lectures, lectures and talks at medical education conferences, colleges and conferences, universities of the third century and universities for children. In a very clear way he presented both the professionals and the laymen with the latest discoveries in the field of neuroscience and the significance of these discoveries for functions, pathologies and brain therapies, and in a broader context for social consequences.

For his popularization activities he has won many awards and distinctions. In 2012 he received a special prize for the whole of popularization activities in the competition “Popularizers of Science” organized by the Ministry of Science and Higher Education and the Polish Press Agency. His activities in this field were awarded by the Polish Academy of Sciences, which appointed him a member of the Board of Scientific Dissemination at the Presidium of the Polish Academy of Sciences. He has also been selected a member of the European Dana Alliance for Brain (EDAB), a European organization dedicated to promoting brain education. Professor Vetulani wrote popular science articles and books that were very successful and widely read. The titles of some of them are: *The Beauty of Neurobiology*, *Today and Tomorrow’s Neurobiology*, *How to improve memory*, *Brain: fascination, problems, secrets*, *How does the brain govern us?*

For the last 17 years prof. Vetulani wrote a popular blog ‘The Beauty of Neurobiology’ at the Word Press site where he described, commented and analyzed the latest findings in the field of brain research.

Professor Jerzy Vetulani advocated the legalization of cannabinoids. He published press articles, did interviews and was taking active part in various demonstrations. He pointed to the therapeutic effect of cannabinoids in many conditions such as glaucoma or multiple sclerosis, appetite disorders, certain types of drug-resistant epilepsy in children, and the promotion of their analgesic properties, especially in terminal conditions. Acting in the Civic Medical Committee Marijuana advocated the need for changes in the Polish drug law. He participated in demonstrations and organized the collection of signatures in favor of the draft law allowing the use of “medical marijuana” in Poland.

Professor Jerzy Vetulani died on April 6, 2017 in Krakow, at the age of 81. He was extremely active until the last days before the tragic accident. It is hard to believe he is gone. We miss him and his wide knowledge, humor, witty comments and positive attitude toward life.