# IN MEMORY OF YU. BELYAEV

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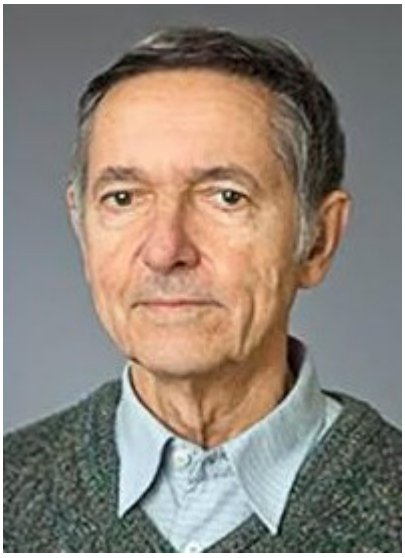
Dear Colleagues,

The Gnedenko Forum is deeply saddened to announce the death, at the age of 93 of one of the leading experts in probability theory, mathematical statistics and their applications, Doctor of Physical and Mathematical Sciences, Professor, Laureate of the State Prize of the USSR



**YURI KONSTANTINOVICH BELYAEV**
(31 August 1932, Moscow - 22 January 2025, Umeå, Sweden)

Yu.K. Belyaev On the memory of Prof. Yuri K. Belyaevwas born in Moscow. From 1951 to 1956 he was a student at the Department of Mathematics of the Faculty of Mechanics and Mathematics of the Lomonosov Moscow State University. From 1956 to 1959 he was a postgraduate student at the Mathematical Institute of the USSR Academy of Sciences (MIAN). During his postgraduate studies, on a topic suggested by his supervisor A.N. Kolmogorov, he studied the properties of the trajectories of Gaussian random processes. In 1960 he defended his PhD thesis on this subject at MIAN.

After this doctorate Yu.K. Belyaev started work at the Lomonosov Moscow State University. He began a long period (until the mid-1990s) of scientific collaboration with B.V. Gnedenko and A.D. Soloviev. They focused on the development of reliability theory, statistical methods of quality control, queueing theory, reliability models, on organization of conferences and seminars at MSU. When the "Reliability Cabinet" was established at the Polytechnic Museum in Moscow, Y.K. Belyaev lectured there on statistical methods for analyzing reliability test data.

The joint work with B.V. Gnedenko and A.D. Soloviev on the book "Mathematical Methods of Reliability Theory"; established the main directions in the study of statistical problems in reliability theory and statistical quality control.

In parallel, Y.K. Belyaev continued his studies on the properties of point processes. In this relation Yu.K. Belyaev selected, translated, and edited the famous monograph (written by D. Cox and W. Smith) on the renewal theory, which played a remarkable key role in the development, wide dissemination and application of this theory by Soviet specialists and those, familiar with the Russian language. He also supplemented this monograph with an excellent complete review of the modern (at that time) results of the renewal processes.

In 1970, for getting the degree of Doctor of Physical and Mathematical Sciences he defended a respective doctoral thesis at the Institute of Applied Mathematics (IAM) of the USSR Academy of Sciences. The thesis was on random point processes generated by random fields. Under his supervision, 24 doctoral students successfully defended their theses.

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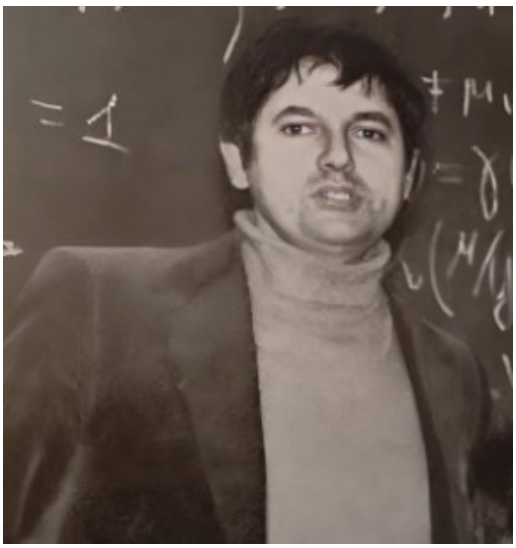

When I graduated from MIPT, V.V. Kalashnikov invited me to speak at a seminar on probability theory and mathematical statistics at Moscow State University. Kalashnikov invited me to speak at a seminar on probability theory and mathematical statistics at MSU. This seminar was held at MSU by Acad. A.N. Kolmogorov and at that time it was chaired by B.V. Gnedenko, A.D. Soloviev and Y.K. Belyaev. A special feature of this seminar was the close connection between probability theory and its applications in queueing theory, reliability theory and mathematical statistics. I was very lucky that the leaders of the seminar played an important role in my future scientific work in Vladivostok and actually gave me an admonition to work in science and to do what I was and still am interested in. This is how B.V. Gnedenko came to the Far Eastern Mathematical School with a number of very interesting papers. A.D. Solovyov acted as my opponent in my doctoral thesis. Y.K. Belyaev was remembered for his very interesting work on mathematical statistics. I remember how, when I was already working in Sweden, Y.K. Belyaev presented his original and very informative results on the application of mathematical statistics in ecology at an international conference on probability theory at Moscow State University. I remember some articles on the queueing theory and reliability published by Y.K. Belyaev in the journal "Technical Cybernetics". Y.K. Belyaev worked closely with I.A. Ushakov in solving some problems of reliability theory. As far as I can judge, Yu.K. Belyaev played a great role in the organisation of the journal 'Reliability: Theory and Applications'. Already while working in Vladivostok, I had the opportunity to see how some of Yu.K. Belyaev's results on asymptotic methods of probability theory echoed the work of V.M. Zolotarev on limit theorems of probability theory, which fascinated me. For me personally, Y.K. Belyaev played an important role in that group of remarkable specialists in probability theory who, in my opinion, formed the backbone of the probabilists on whom we, then young scientists working even far from Moscow, tried to orient ourselves and rely.

**Gurami Tsitsiashvilli**

Y.K. Belyaev founded and was the head of the Department of Reliability and Queueing Theory of the University Laboratory of Statistical Methods at MSU. Later this department was transformed into the Laboratory of Probability and statistics at the Department of Probability Theory of the Faculty of Mechanics and Mathematics of MSU. Y.K. Belyaev was a member of the editorial boards of the scientific journals "Technical Cybernetics"; and "Statistics". Y.K. Belyaev is one of the authors of the book "Questions of the Mathematical Theory of Reliability", published under the supervision of B.V. Gnedenko IN 1983.

The rapid development of computational techniques and the numeric methods reasonably created a need for new approaches in applications. For solving problems of estimating the accuracy of statistical inference, like study of distributions of point estimates, the biases, various classifiers, selection of the regression function in the presence of explanatory variables, etc. Y.K. Belyaev gave a theoretical justification of the validity of options for intensive use of computations in solving several such problems. Professor Belyaev has been invited to teach and conduct research at the Universities of Berlin and Magdeburg (Germany), Sofia (Bulgaria), Lund and Umeå (Sweden). Since 1993 he has been a professor at Umeå University where he supervised more than 30 doctoral students.

Y.K. Belyaev is a laureate of the USSR State Prize, a member of the International Statistical Institute (ISI) and the Institute of Mathematical Statistics (IMS). He is the author of more than 200 scientific publications, including 5 books. Since the establishment of the Gnedenko Forum, Yuri K. Belyaev has been its unchanging Honorary President. It is largely thanks to his support and attention that the Forum has taken a recognized role and has been active for more than 20 years.

The name of Yuri Konstantinovich Belyaev will remain in the history of the Probability, Statistics and its numerous applications.

He stays in the memory of all those who knew him and worked with him.

Honor to his blessed memory.

**Gnedenko Forum Advisory Board**