

to create a graduate program in physics and astronomy in 1966. During that protracted process, Allen's persistence was as important as the strength of his arguments.

Following the launch of *Sputnik* in 1957, interest in the quality of science education and the problem of attracting young students to physics became national priorities fostered by NSF. State academies of science were invited to operate visiting scientist programs for schools, and colleges were asked to conduct workshops for science teachers. Allen took on both tasks. Through the Northern New England Academy of Science, he organized an NSF visiting scientist program that arranged for professors from most of the colleges and universities of the three northern New England states to make visits to high schools. That valuable program also gave the visitors an insight into the difficulties that high-school teachers faced daily.

During his first year at Dartmouth, Allen explored out-of-the-way places throughout Wilder Laboratory and found a variety of early scientific instruments, some dating back to before the founding of the college in 1769. Delving into their history, he came to appreciate their value and began to look for better ways to protect Dartmouth's legacy. Lack of suitable space, money, and administrative interest promised to make it a long and difficult task until Allen had the idea of making the instrument collection the centerpiece of the science division's contribution to the Dartmouth bicentennial celebration in 1969–70, with a major exhibition in the art gallery on campus. Somehow, he convinced the artists on the committee that science belonged in the gallery and that the instrument exhibit would be a three-dimensional work of art. The future of the collection was assured when the exhibit proved to be a major success, attracting more visitors per week than any previous exhibit in the gallery. The history of science as revealed in scientific instruments became one of Allen's major interests.

After his retirement in 1975, Allen remained active as curator of Dartmouth's collection of historical scientific apparatus. He also continued his many services to the community at large. In 1997, he was named Hanover Citizen of the Year for his "many years of service to advance the quality of life in the community."

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Ian Ilyich Kogan

Ian Ilyich Kogan, reader in theoretical physics at the University of Oxford and a fellow of Balliol College, died of a heart attack in Trieste, Italy, on 4 June 2003. Ian was a greatly talented physicist of boundless energy and enthusiasm with a legion of close friends and collaborators. He made major contributions to physics, including being codiscoverer of phase transitions in strings, of logarithmic conformal field theory, and of the theory of multigravity. It is fair to say that Ian's impact shaped the direction of research in those areas.

Ian was born into a Jewish family on 14 September 1958 in Glazov, a small town in the Northern Urals, far away from all the cultural centers of what was then the Soviet Union. All life in that town revolved around a uranium plant, where Ian's parents worked for 41 years. At age 16, Ian began his life's journey; accompanied by his father, he went to Moscow to sit the entrance examinations at the Moscow Institute of Physics and Technology (MIPT).

Despite the then common prejudice against Jews, Ian obtained admission to the MIPT. In 1981, he graduated with an MS in theoretical and mathematical physics. He then moved to the Institute for Theoretical and Experimental Physics (ITEP) for his doctoral studies in theoretical physics under the supervision of Boris Ioffe and Karen Ter-Martirosyan. He received his PhD in 1985 for his studies on hadronic form factors and the coupling constants from the quantum chromodynamic sum rules.

Ian stayed on at the ITEP in a junior staff position. He began his professional career studying QCD, the theory of hadronic physics. Although he always retained his interest in QCD, his scientific horizons rapidly expanded. He started to branch out into string theory, believed by many to be the most fundamental theory of nature capable of unifying all the fundamental interactions. While at the ITEP, Ian made major contributions to the understanding of the behavior of strings at high temperatures and became an early explorer of Chern–Simons electrodynamics.

Leaving Russia in 1991, Ian went to the University of British Columbia and then to Princeton University as a visiting professor, before moving in October 1994 to Oxford as a university lecturer in theoretical physics and fellow of Balliol College. In 2001, he became a British citizen. Ian's span of interests was phenomenal, and he



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made significant contributions across a wide range of fields. He made notable advances in Liouville theory, extra-dimension scenarios, black holes, anyons, chiral condensates, and high-temperature field and string theory. His interests extended beyond physics, too, to the application of the techniques of theoretical physics to the analysis of risk assessment in the financial markets.

Ian's knowledge of his subject was encyclopedic. By the time he arrived in Oxford, his command of physics was such that undergraduate and graduate students and his colleagues were invariably treated to a spontaneous solution to a problem or explanation of a perplexing matter. In seminars covering almost any subject, he would engage the speaker in a lively and focused debate. His presence at Oxford added immeasurably to the intellectual activity.

Ian circumnavigated theoretical physics. And everywhere, he left his imprint. He had the spirit of a pioneer and a scout—always at the front line of research and quite often ahead of the front line. He generously shared his ideas, which were stimulating and encouraging, with students and collaborators. He published some 200 scientific papers with nearly 60 collaborators around the globe. Ian's death is a tragedy for the entire physics community, but his many friends and colleagues treasure the privilege it has been to know such a vibrant spirit.

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