

ERICH W. ELLERS

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**John Henry Holloway Chalk**  
**1922-2004**



John Henry Holloway Chalk was born on September 13, 1922, in London, England, where he grew up and received most of his formal education. He died on June 28, 2004, in Vancouver, British Columbia. John Chalk, an eminent mathematician, was elected to the Royal Society of Canada in 1972. He joined the Department of Mathematics at the University of Toronto on July 1, 1960. Already at that time, John was a well-established researcher with many papers to his credit.

In 1964, John was instrumental in bringing two more number theorists, Hans A. Heilbronn and Robert A. Smith, into the department, thus establishing a very creative and active nucleus in Number Theory. John Chalk, Bob Smith, and Hans Heilbronn, all three were interested in exponential sums. There is a conjecture of John Chalk on exponential sums which is still now of great interest. In 2001, T. Cochrane and Zh. Zheng published a paper "On the upper bounds of Chalk and Hua for exponential sums", and several articles on "Chalk's conjecture" appeared in the 1990's.

John Chalk's research career spanned some fifty years and resulted in more than fifty publications, appearing in journals of excellent reputation. He achieved results in a wide range of central topics within Number Theory. Robert Vaughan of the University of Pennsylvania, a prominent analytic number theorist, sheds some light on John Chalk's depth and attitude towards research when Robert writes in a recent letter, "I remember him describing to me various ways in which things might be taken quite a bit further, and with fundamental consequences. In fact, even now it suggests several things to me which really need to be investigated."

John served the Canadian mathematical community in various ways. Prior to accepting the position at Toronto University, he spent three years with the Mathematics Department at McMaster University in Hamilton. For several years, he was the Editor of the Canadian Journal of Mathematics. John Chalk was well known and internationally respected for his work. This resulted, in particular, in his election as a Fellow of the Royal Society of Canada.

The career of John Chalk as a research mathematician had an auspicious beginning. He earned two Ph.D. degrees, one from UC London and one from Cambridge, and he was a Postdoctoral Fellow at Princeton; his supervisors were three of the most outstanding researchers in their fields, H. Davenport, L. J. Mordell, and E. Artin, respectively.

During his tenure in Toronto, John received distinguished awards, among them a Scientific Exchange Fellowship Canada-France and a D.S.I.R. Fellowship from the United Kingdom, e.g. to spend several months in Nottingham visiting David Burgess to discuss the estimation of character sums. The fellowships enabled John further to go on extended visits with the Faculté des Sciences in Paris, Imperial College in London, and several other universities in Britain and France. He was no stranger at the famous Forschungsinstitut at Oberwolfach in Germany. John was awarded a D.Sc. from London in 1987 and a Sc.D. in 1988 from Cambridge. He was a long-time member of the London Mathematical Society.

John Chalk was a very pleasant colleague, reserved and elegant. He was also an excellent lecturer and teacher. His clear and accurate notes were much appreciated by his students. He supervised six Ph.D. students. Their theses eventually resulted in a dozen publications in scientific journals. The now well-known number theorist Robert Vaughan was inspired to go into research in number theory after he took his first course on the subject from John Chalk at

University College, London, where John spent a sabbatical. Colleagues and students alike appreciated John's quiet ways, his genuine interest in their work, and his fine sense of humor.

William Chen, now Professor of Mathematics at Macquarie University in Sydney, Australia, reminisces about his time at Imperial College in London:

"We used to spend a lot of time at the various pubs talking about mathematics, cricket, and other things. Bob Vaughan, Klaus Roth, and I regularly shared our number theory notes. Since the notes had been modified so many times, we never quite worked out who had the first version. The only thing we were sure of was that I took my first course from Bob and he took his first from John, so John must have had a lot of influence in the presentation. One day we told John that we both in some sense first learned our number theory from his notes. John was immediate in his reply. No, he had not bothered to prepare any notes - since he had a copy of Davenport's!"

John remained an active member of the mathematical community till long after his retirement from the University of Toronto in 1988. For about ten years he was an Imperial College Senior Fellow in London, lecturing and attending lectures regularly in Cambridge and London. He spent six months in Vienna at the Technische Universität with Peter Gruber and gave several lectures in French at the University of Caen while visiting Yves Hellegouarche.

John H. H. Chalk spent the last few years of his life in Vancouver, British Columbia. He leaves his wife, Geraldine, and two sons and their families. They have taken John's ashes to England to the Malvern Hills, near Worcester, in the West Country, where his mother came from and where she, too, is buried.

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*(Author's title given as of the time of writing)*