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Thomas E. Hull
1922-1996



Tom Hull, Professor Emeritus of Computer Science and Mathematics at the University of Toronto, died suddenly of a heart attack in Toronto on 15 August 1996, at the age of 74. He was born in Winnipeg on 5 June 1922. He was survived by his wife Kae; daughters Diane and Nancy; sons-in-law Ted and Ross; grandsons Jeff, Brendan and Darren; and sister Joan.

Tom Hull was a scholarship student at Upper Canada College before entering Trinity College, University of Toronto, as a Mathematics and Physics undergraduate student. He graduated with a BA in Applied Mathematics in 1944 with two signal honours: a Moss Scholarship, awarded by the University of Toronto Alumni Association for outstanding academic and extracurricular leadership and the Governor General's Silver Medal, awarded by Trinity College for the highest first-class standing in the graduating year of an honours program. After working in the Meteorological Service in Toronto for two years, he returned to the University of Toronto in 1946. He completed his MA in Physics and Meteorology in 1946 and his PhD in Applied Mathematics in 1949 under the supervision of Professor Leopold Infeld, with a thesis on "The Factorization Method" in Quantum Mechanics.

Upon graduation, Tom Hull became an Instructor in Mathematics at the University of British Columbia and was promoted to Assistant Professor in 1950, Associate Professor in 1955, and Full Professor in 1961. During those years he made a lasting contribution to UBC by establishing the discipline of Computer Science. Over a five-year period beginning in 1958, he was a Visitor at the California Institute of Technology, a Research Associate at Stanford University, and a Visitor at New York University.

Tom Hull's interest in Numerical Analysis was aroused in 1957 when he was appointed director of the Computing Centre at UBC upon the arrival of the University's first computer, an Alwac III E with an 8K word drum memory, but with practically no software beyond a few elementary function routines and a program to play Tic-Tac-Toe. (Tom Hull loved to tell the story of the Dean with financial responsibility for the new Computing Centre who suffered a humiliating defeat by the program on his first visit to the Centre.)

Tom Hull returned to the University of Toronto as a Visiting Professor in 1963-64, and in 1964 he accepted an appointment as a Professor in the University's new Computer Science Department, with a cross-appointment to the Mathematics Department. He chaired the Computer Science Department at UofT during its formative years from 1968 to 1975. Largely because of his outstanding success in recruiting and inspiring talented young faculty members during that period, the Department was consistently ranked as one of the top ten Computer Science Departments in North America during the 1970s and 1980s. Moreover, many visitors to the Department remarked that it was not a typical academic department, because there was so little in-fighting. This is another enduring legacy of his leadership. In tribute to Tom Hull, Jim Horning, a former Assistant and Associate Professor in the Department, wrote:

"He was one of the finest men I have known, and taught me more than I can say. He was an effective leader who got commitment by soliciting advice, who got the best from people by expecting the best, whose fundamental decency was apparent in every interaction. He taught by example that the highest standards can be reached cooperatively, without envy, jealousy, or corrosive competition."

Tom Hull officially retired from the University of Toronto in 1987, but remained active in research until the day he died.

Even before I met Tom Hull, he had a significant influence on me. In the early 1970s, I used one of the books he wrote in the first Computer Science course that I took at the University of Toronto. Tom Hull wrote seven textbooks that played a very important role in establishing Computer Science as an academic discipline in the late 1960s and early 1970s. Brad Lucier, now a Professor of Mathematics and Computer Science at Purdue University, summed-up the contribution of Tom Hull's books this way:

"He was one of my computer heroes as a high-school student because of his book with David Day on programming. I told him at lunch during my visit to the CS Department at Toronto that I thought that "Computers and Problem Solving" was a great book because it could take a week to solve some of the problems in it. He thanked me, and said that many people didn't like the book, for precisely the same reason."

I was fortunate to have Tom Hull as an instructor for the first course in Numerical Analysis that took at the University of Toronto. It was clear to all in his class that Professor Hull knew his subject thoroughly. Moreover, his lectures were very well organized, clear, concise, and delivered with a sense of humour. Many students find Numerical Analysis a little dry and somewhat difficult. Tom Hull was well aware of this and motivated his students by beginning all his lectures with a short intuitive discussion of the topic that he was going to talk about that day and by briefly outlining its importance, often relating the topic to other subjects that we were studying. His lecturing style was a model for many of us who later went on to teaching careers ourselves.

Among the many reasons for Tom Hull's great success as a teacher was his love of interacting with people. He clearly enjoyed teaching a subject that was dear to him and seeing others take pleasure in learning about it. His enthusiasm was infectious and rubbed off on many of his students.

I was also fortunate to have Tom Hull as a graduate supervisor, another role at which he excelled. In part, this was because he was an excellent researcher himself. At the time that I was a graduate student, about 30 years ago, Tom Hull was the chairman of the Computer Science Department, a member of the NSERC committee on grants and scholarships, an editor of three prestigious journals, the author of several of the important papers in our area and an invited speaker at many international conferences. Tom Hull knew most of the key players in our research area and was aware of the topics on which they were working. He had a very good sense for what was a good problem to tackle and what would likely be fruitless. Equally importantly, Tom Hull was an excellent graduate supervisor at a personal level. His enthusiasm for discussing new ideas with students was infectious. Even though, as noted already, he was extremely busy then, he always found time for his students and he gave all of us the impression that our work was a high priority for him. He was always supportive, encouraging, and very generous in his praise of good ideas. Of course, not all the ideas that students have are good ones. He was careful not to be too deflating when explaining why some silly scheme a student had devised was not sound. He usually got the student back on track and feeling positive about pursuing another line of attack.

Tom Hull received many honours in recognition of his outstanding career: a Centennial Medal in 1967; election to the Royal Society of Canada in 1971; an Honorary Doctorate from Dalhousie University in 1987; and election as an ACM Fellow in 1994. However, I think one of the most significant tributes to Tom Hull's illustrious career is a note that appeared in the preface to *Applied Numerical Mathematics*, Vol. 22, Nos. 1-3 (November 1996). As background to this tribute, I should note that Tom Hull, Wayne Enright, and I were invited to write a paper on "Runge-Kutta Research at

Toronto” for a special issue of this journal to celebrate the centennial of Runge's seminal article on this topic in 1895. Our paper is largely an account of Tom Hull’s influence on the many people he attracted to the University of Toronto and his research contributions in this area. Returning to my main point, John Butcher, the editor of the special issue, wrote the following tribute to Tom Hull:

“Since the preparation of this special issue began, one of the authors has died. Thomas E. Hull of the University of Toronto has been one of the leading workers in numerical methods for ordinary differential equations for the best part of 40 years. Not only has he made many personal contributions, but he has also built up a research school in this subject that is second to none. He was a man of generosity of spirit as well as of great intellectual stature and we have every reason to be proud and grateful for the strength he has added to our subject. The group of people to whom this special issue is dedicated, Runge, Kutta, Heun, Nystrom and others who have founded the study of Runge-Kutta methods and brought it to its present state of importance, certainly includes Tom Hull amongst its members.”

I would like to close by saying simply that Tom Hull was a model gentleman and scholar. Although he will be sorely missed, his influence will live on with all us who benefited from his insight, leadership and friendship.

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