William Henry Gauvin

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Submitted by the NAE Home Secretary

William Henry Gauvin, dedicated educator, world-renowned engineer and researcher, and champion of the coordination of university-industry-governmental research in Canada, died on June 6, 1994, at the age of eighty-one.

Dr. Gauvin was elected to the National Academy of Engineering as a foreign associate in 1987; he was a founding member of the Canadian Academy of Engineering in 1986.

Bill, as he was affectionately known, was born in Paris, France, of an English father and a French mother. After his father died, his mother remarried and later as a teenager Bill requested that his surname be changed to that of his stepfather. This explains why he has English Christian names and a French surname.

His early education was in London, Paris, and Brussels. He received all his university education in chemical engineering and physical chemistry at McGill University, obtaining his Ph.D. in 1945. During his Ph.D. studies he was a lecturer in the Chemical Engineering Department at McGill.

After two years in industry he returned to be an associate professor of chemical engineering at McGill and remained so until 1962. During this time, he was an active consultant to the Pulp and Paper Research Institute of Canada; in fact, he became the head of its Chemical Engineering Division in 1957 and so maintained major responsibilities in these two institutions.

During this time, he developed applications for his invention, the Atomized Suspension Technique (AST). This is a high-temperature spray system, which was used primarily to pyrolize waste from pulp and paper processes.

It was during this period at McGill that he attracted a large number of Ph.D. students, whose fundamental studies in fluid mechanics and heat and mass transfer related to the need for a better understanding of the AST process and other aspects of the pulp and paper industry. His studies of high-temperature gas-solid systems (he referred to them as pseudo gases) led him to study the transfer processes and chemical reactions in thermal, plasma jets, particularly in metallurgical applications. He has been considered a pioneer in obtaining a fundamental understanding of thermal plasma systems.

In 1961 he founded the Noranda Research Centre in Montreal and was its first research manager and later its director of research and development until 1983. During all this time, he was a senior research associate (directing doctoral thesis research) at McGill University. He has coauthored more than 190 technical papers in the fields of electrochemistry, high-temperature heat and mass transfer, fluid mechanics, and plasma technology; he also holds numerous patents in high-temperature chemical processing and technology of thermal plasma jets. He has directed the research of more than fifty graduate students.

Bill Gauvin was a staunch supporter and an active member in professional societies. He had membership in nineteen different societies at one time or another covering the chemical engineering, pulp and paper, metallurgical, engineering, and research management fields in Europe and North America. He served as president for many of them.

Bill was also invited to serve on many government scientific advisory committees, including the National Research Council of Canada (NRC), the Science Council of Canada, le Conseil de la Politique Scientifique du Quebec, Hydro Quebec's Institut de Recherche en Energie, Advisory Committee on Nuclear Safety, and the Industrial Materials Research Institute of the NRC. In these capacities, he played a major role in shaping scientific policy in Canada since the early 1960s.

His illustrious academic and industrial career has been recognized by academic, government, and professional institutions. He received four honorary doctoral degrees and sixteen prestigious medals from Canadian and European professional societies (in many cases their highest awards). He was elected an honorary fellow in Canadian and U.S. societies and won many prizes for best scientific papers. He was the recipient of the Izaak Walton Killam Memorial Prize (Canada's highest award) and the Prix du Quebec. He was also awarded the Companion of the Order of Canada by the Canadian government.

It is important to realize that much of his reputation as a researcher was established during the 1950s and early 1960s—a time when research funds were scarce, Canadian university professors were underpaid and overworked, and research was done not "because of" but "in spite of" the academic environment in Canada. Bill Gauvin worked hard at establishing industrial connections and relating his fundamental research to industrial needs, so that he could finance all his research activities. This often meant that he had to work in different research fields simultaneously.

Bill Gauvin was highly respected by his peers and graduate students alike for his technical knowledge, his strong sense of professionalism and integrity, his enthusiasm for doing research and acquiring knowledge, and his "joie de vivre" attitude toward life in general. He represented that dedication, enthusiasm, desire to learn, and sense of professionalism to which all students should aspire. It was and continues to be a source of real pride for all his students to be known as "one of Bill Gauvin's boys," as a Massachusetts Institute of Technology professor once referred to me.