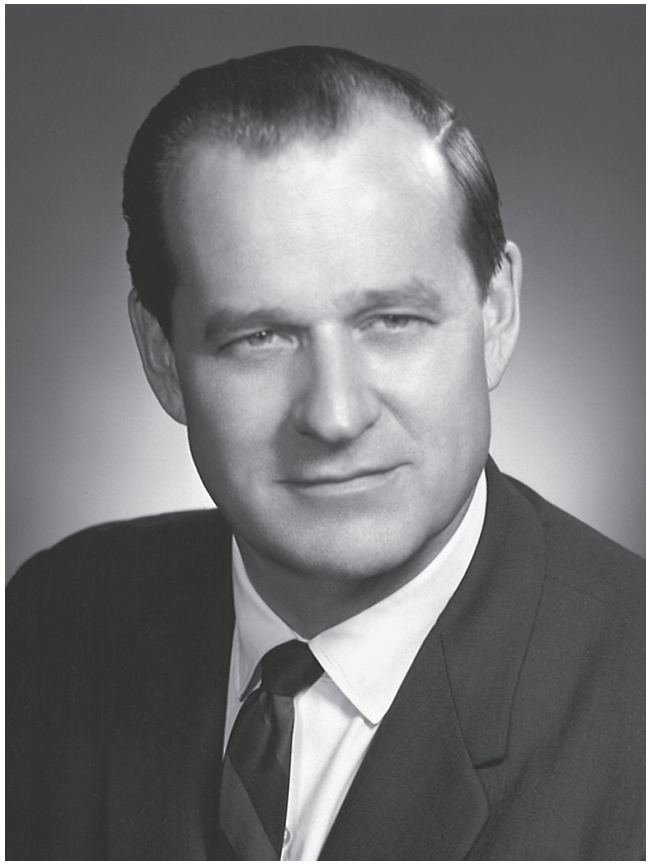

DONALD A. DAHLSTROM

1920–2004

Elected in 1975

"Contributions to liquid-solids separation processes in mineral recovery and waste disposal."

BY BOB EMMETT
SUBMITTED BY THE NAE HOME SECRETARY

DONALD ALBERT DAHLSTROM, a leader in the practical application of liquid-solids separation theory to the filtration and sedimentation fields, died at age 84 on June 16, 2004, after a long illness.

Don was born on January 16, 1920, in Minneapolis, and spent his youth in Minnesota between city and farm, where he learned the values of hard work, diligent study, and concern for humanity that were to guide him throughout his life. He attended Macalester College, but earned his bachelor of science degree in chemical engineering at the University of Minnesota in 1942.

His interest in seeing the rest of the world led him to accept employment with the International Petroleum Company in Peru as a petroleum engineer. During the war years he helped develop and apply new technologies for enhanced oil recovery, such as water flooding of production zones, to improve output of this valued commodity. Not long after reaching Peru he was able to persuade his fiancée, Betty Cordelia Robertson (1919–1992), to embark on the long journey south, and they were married in Talara, Peru, in 1942.

Don returned from Peru in 1945 and joined the US Navy, serving for two years before enrolling at Northwestern University to pursue a doctorate while teaching in the

Chemical Engineering Department. He began his teaching career as an instructor and advanced to assistant professor and finally associate professor when he left Northwestern in 1956. His research centered on the liquid-solids cyclone, a relatively new processing innovation that was beginning to be applied in the minerals industry, particularly in the coal fields. He formulated the parameters necessary for sizing and applying the device, which is now widely used in many industrial and municipal applications, not just mining.

His stay at Northwestern was particularly marked by his open office policy, which allowed easy access for all students any time he wasn't in the classroom. Conversations were not limited to technical questions but included discussions of current events. Don was always ready with words of advice on personal matters when it was requested. His enthusiasm for life in general and his personal relations with his students in particular were demonstrated frequently during the lunch hour softball games on the lawn just outside the Chemical Engineering wing. His boisterous laughter and constant banter during these lively games remain a pleasant memory of those student days.

During his years at Northwestern, Don found time to build a home for his family, which now included five children—Mary, Don, Christine, Stephanie, and Michael—in the River Woods area near Deerfield, Illinois. Like many projects undertaken by busy people, the home became a work in progress for many years, continuing even after Don left his teaching job. His children recall that the house would become a hive of activity during his 4th of July pool parties for his company's staff and families or when, often at the spur of the moment, visiting dignitaries or colleagues from the 64 countries he traveled to in his life would be invited to dine or stay at his home instead of a hotel, treating his wife and children to fascinating cultural exchanges and insights into the world beyond Illinois. His wit and charm gave him an ability to make everyone feel at home. Two-week summer car camping trips with his family, hijinks around the pool, maintenance of his 2½-acre forested lot, and major snow removal operations or gravel driveway

restorations became required preoccupations until he moved his home to Salt Lake City.

In 1953 Don accepted a position as director of research and development for the EIMCO Corporation, an up-and-coming manufacturer of vacuum filtration equipment, in Salt Lake City. At the time there were no established or theoretically sound methods in use for correlating bench-scale filtration data and scaling up to commercial operation. B.F. Ruth had proposed the Hagen-Poiseuille equation as a foundation for filtration theory; Don expanded on his work and promoted the correlation bases that are still in almost universal use. These correlations were very practical and can be used with confidence with a minimum of good data, an approach that has been confirmed in almost all processing industries. There was an immediate use for this approach as there was an urgent search under way for uranium. Don applied the techniques at newly discovered mining operations in Ontario, leading to a significant expansion of the company's business as well as timely production of uranium.

In 1957 EIMCO acquired Process Engineers, Inc., a small company engaged in the manufacture of gravity sedimentation equipment. This move, combined with the vacuum filtration equipment experience, was important in helping establish the company as a leader in liquid-solids separation technology, and Don's work contributed to a better theoretical understanding of this field.

He was very active in the professional engineering societies, even gently pressuring his staff engineers to follow his lead and support these entities with publications and active participation. He served as AIME director and vice president in 1973–1975 and as director and president of the Society of Mining, Metallurgy, and Exploration Engineers (SME; 1974–1976) and the American Institute of Chemical Engineers (AIChE; 1959–1964). He also was national president of Tau Beta Pi, the scholastic honorary society, and a member of the American Chemical Society and the Filtration Society of London. For the National Research Council, he served on the

International Affairs Advisory Committee (1987–1992), the Committee on Onshore Mineral Development (1982–1983), and the Committee on Mineral Resources Technology, Phase II (1981–1984).

Possibly because of his sincere belief in teaching and promoting knowledge, Don was very active in extending these findings to a variety of industries. He was a tireless writer, producing more than 100 publications in various technical journals and textbooks. He was a contributor and section editor for *Perry's Chemical Engineers' Handbook* (4th through 7th editions; McGraw-Hill) and a contributor to the American Institute of Mining Engineers (AIME) *Mineral Processing Handbook*. At SME he was very active in promoting education in the minerals fields, and was one of the founders of GEM (Government, Education, and Minerals), which develops and distributes information for use in grammar schools to educate students about the critical importance of minerals in the modern world.

In addition to his NAE election in 1975, he was selected in 1983 as one of 30 Eminent Chemical Engineers on the occasion of the AIChE 75th Anniversary. He also received numerous honors for his outstanding work during his lifetime, including the Holgate Award (1949) and Merit Award (1965) from Northwestern University; the AIME Rossiter W. Raymond Memorial Award (1952) and Robert H. Richards Award (1976); the AIChE Founders Award for Outstanding Contributions to the Field of Chemical Engineering (1972) and Lawrence K. Cecil Award in Environmental Chemical Engineering (1977); and the SME Arthur F. Taggart Award (1982) and President's Citation Award (1988).

Don retired from EIMCO in 1984 to pursue his lifelong love of teaching, accepting professorships in chemical and fuels engineering and metallurgical engineering at the University of Utah. At the time of his departure, his technical group had grown from only four engineers in 1953 to more than 70, and EIMCO, now known as Envirotech Corporation, had become the worldwide leader in the filtration and sedimentation fields.

Don is survived by his second wife, Sally York Dahlstrom, whom he married in 1993 following the death of his beloved Betty, and by his five children and many grandchildren and great-grandchildren. He is fondly remembered by the many people whose lives were greatly enriched through their acquaintance with him.