Peter Ladislaw Hammer was born in Timisoara, Romania, on December 23, 1936. He earned his Ph.D. in mathematics under Academician Grigore C. Moisil at the University of Bucharest in 1966. He defected to Israel in 1967 where he became a professor at the Technion in Haifa. After moving to Canada, he taught from 1969 to 1972 at the University of Montréal, and from 1972 to 1983 at the University of Waterloo. In 1983, he moved to the USA and became a professor at Rutgers University, where he founded RUTCOR—the Rutgers Center for Operations Research. He remained the director of RUTCOR until his untimely death in a tragic car accident, on December 27, 2006.

For more than 40 years, Peter Hammer has ranked among the most influential researchers in the fields of operations research and discrete mathematics. He made numerous major contributions to these fields, launching several new research directions. His results have influenced hundreds of colleagues and have made a lasting impact on many areas of mathematics, computer science, and statistics.

Most of Peter Hammer’s scientific production has its roots in the work of George Boole on propositional logic. More than anyone else, Peter Hammer used and extended Boole’s *machina universalis* to handle questions relating to decision making, analysis and synthesis as they arise in natural, economic and social sciences. Over the span of his scientific career, he conducted eclectic forays into the interactions between Boolean methods, optimization, and combinatorial analysis, while adapting his investigations to the most recent advances of mathematical knowledge and of various fields of application. Among the main research topics which received his attention, one finds an impressive array of methodological studies dealing with combinatorial optimization, some excursions into logistics and game theory, numerous contributions to graph theory, to the algorithmic aspects of propositional logic, to artificial intelligence and, more recently, to the development of innovative data mining techniques. His publications include 19 books and over 240 scientific papers. (See the Web site http://www.rutcor.rutgers.edu for a complete bibliography.)
At the very onset of his career, as a researcher at the Institute of Mathematics of the Academia of Romania, Peter Hammer wrote several important articles on transportation problems, jointly with Egon Balas. At the same time his advisor, Grigore Moisil, directed him to the study of Boolean algebra. In this field, a central role is played by functions depending on binary variables, and taking either binary values (i.e., Boolean functions) or real values (i.e., pseudo-Boolean functions). In a series of papers, Peter Hammer demonstrated that a large variety of relevant problems of operations research, combinatorics and computer science can be reduced to the optimization of a pseudo-Boolean function under constraints described by a system of pseudo-Boolean inequalities. A further main conceptual step in his work was the characterization of the set of feasible solutions of the above system as solutions of a single Boolean equation (or, equivalently, of a satisfiability problem). This led him, in joint work with Ivo Rosenberg and Sergiu Rudeanu, to the development of an original approach inspired from classical Boolean methods for the solution of a large variety of discrete optimization problems.

This research project culminated in 1968 with the publication of the book *Boolean Methods in Operations Research and Related Areas* (Springer-Verlag, 1968), co-authored by Sergiu Rudeanu. This landmark monograph, which founded the field of pseudo-Boolean optimization, has influenced several generations of students and researchers, and is now considered a “classic” in operations research.

In a sense, Peter Hammer’s early work can be viewed as a forerunner of subsequent developments in the theory of computational complexity, since it was in effect demonstrating that a large class of combinatorial optimization problems is reducible to the solution of Boolean equations. However, this purely “reductionist” view of his work would be quite narrow. In fact, Peter Hammer systematically used the “canonical” representation of various problems in terms of Boolean functions or Boolean equations to investigate the underlying structure, the “essence” of the problems themselves. More than often, this goal is met through a simplifying process based, once again, on the tools of Boolean algebra. This approach provides, for instance, a simple way to demonstrate that every system of linear inequalities in binary variables is equivalent to a set of inequalities involving only 0, 1, −1 coefficients, as observed in a joint paper by Frieda Granot and Peter Hammer (1972). It also led Peter Hammer, Ellis Johnson and Uri Peled (1975) to early investigations into the facial structure of knapsack polyhedra.

In a related stream of research, Peter Hammer established numerous fruitful links between graph theory and Boolean functions. In a famous joint paper with Vašek Chvátal on the aggregation of inequalities in integer programming (1977), he introduced and characterized the class of threshold graphs, inspired by threshold Boolean functions. Threshold graphs have subsequently been the subject of scores of articles and of a book by N.V.R. Mahadev and Uri Peled, two of Peter Hammer’s former doctoral students. Other links between graphs and Boolean or pseudo-Boolean functions have been explored in joint work with Claude Benzaken, Dominique de Werra, Stephan Foldes,