DAVID SPROTT DISTINGUISHED LECTURE BY

JACK KALBFLEISCH

DR. KALBFLEISCH

Dr. Kalbfleisch is Emeritus Professor of Biostatistics and Statistics at the University of Michigan and Distinguished Emeritus Professor at the University of Waterloo. He received his PhD in 1969 from Waterloo and was an assistant professor of statistics at the State University of New York at Buffalo (1970-73). He was on faculty at Waterloo (1973-2002) and served as chair of Statistics and Actuarial Science (1984-90) and dean of Mathematics (1990-98). He also served as chair of the Department of Biostatistics at Michigan (2002-07) and as Director of the Kidney Epidemiology and Cost Center (2008-11). He has published in various areas of statistics and biostatistics including life history and survival analysis, likelihood methods of inference, mixture and mixed effects models and medical applications, particularly in the area of renal disease and organ transplantation. He is a Fellow of the Royal Society of Canada and a Gold Medalist of the Statistical Society of Canada.

David A. Sprott (1930-2013)

Professor David Sprott was the first Chair (1967-1975) of the Department of Statistics and Actuarial Science at the University of Waterloo and first Dean of the Faculty of Mathematics (1967-1972). The David Sprott Distinguished Lecture Series was created in recognition of his tremendous leadership at a formative time of our department, as well as his highly influential research in statistical science.

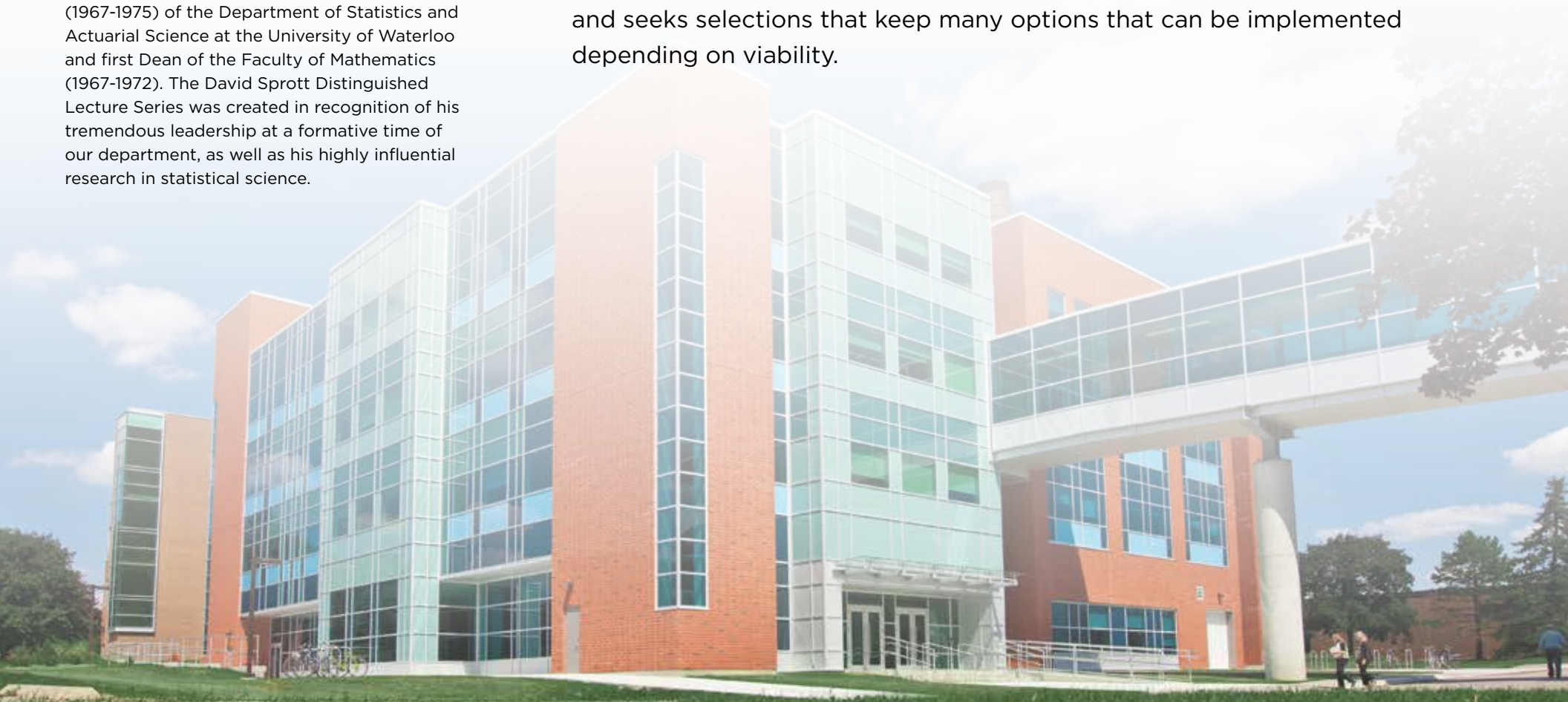
Match making in a Kidney Paired Donation Program

Thursday, October 6, 2016 | 4 p.m.
STC 0040, University of Waterloo

Reception will follow in the M3 Bruce White Atrium

I was David Sprott's first PhD student and I owe much to him. It is therefore a great pleasure to participate in this lecture series in his honour.

A kidney-paired donation program (KPDP) consists of transplant candidates and their incompatible donors, along with non-directed donors (NDDs), who are willing to donate a kidney to the program. The aim of the KPDP is to arrange matches of donors and candidates in order to overcome incompatibilities. A virtual crossmatch based on blood types of a candidate and donor as well as donor HLA antigens and candidate sensitivities can be used to identify potential transplants. Unfortunately, however, an identified potential transplant often cannot proceed (is not viable) because of illness or schedule conflicts or because an incompatibility is identified on a definitive laboratory crossmatch. A given KPDP can be represented as a directed graph with edges indicating a potential transplant, and transplants can be carried out based on disjoint cycles of pairs and chains created from NDDs. A problem of substantial importance is how to select potential transplants for consideration in order to optimize the number of transplants achieved and I will discuss and compare various approaches to this. Our approach takes account of probabilities that potential transplants are viable and seeks selections that keep many options that can be implemented depending on viability.



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