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# Committee of Presidents of Statistical Societies

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## **2008 Fisher Lecture**

Wednesday, August 6, 2008: 4:00 PM to 5:50 PM, at JSM in Denver, CO

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### **The Population Science Research Agenda: Multivariate Failure Time Data Analysis Methods**

Sir Ronald Aylmer Fisher was a central founder of modern statistical science, with multiple pivotal contributions to study design, as well as to data analysis and data interpretation methodology. Crucial current issues for chronic disease population science research include the study designs needed to obtain reliable information on preventive intervention effects, and the adequacy of traditional sources and methods for preventive intervention hypothesis development. Settings in which both randomized clinical trial data and cohort study data are available for the same 'intervention' provide an opportunity to examine the study design issue. The newer types of high-dimensional molecular data that are coming available, especially plasma proteomic data, provide an opportunity to invigorate the preventive intervention development enterprise. Further statistical methods developments are needed to take advantage of these opportunities, including multivariate failure time data analysis methods generally, and efficient nonparametric estimates of the multivariate survivor function in particular. These topics will be discussed in the context of the NIH-sponsored Women's Health Initiative randomized controlled trial and cohort study of postmenopausal hormone therapy and of a low-fat eating pattern, among 161,000 postmenopausal U.S women over the past 15 years.