

**Department of Epidemiology and Biostatistics  
Biostatistics Seminar**

Wednesday, January 21, 2015  
12:00pm - 1:00pm -- WG73

**“Some problems in genetic epidemiology  
—past, present and future”**

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**Abstract:** In 2000 I wrote a paper with Elizabeth Thompson entitled “A Century of Biometrical Genetics” (Biometrics 56, 659-666\*). That paper reviewed the major contribution of biometrics to genetics over the 20<sup>th</sup> century, covering population genetic models, familial correlations, segregation analysis and co-segregation analysis. It then described the current research in biometrical genetics, and predicted future research problems. In this talk I shall review these topics and discuss how the field is at the same time changing and returning to its roots. The first 15 years of the 21<sup>st</sup> century have seen an explosive development of statistical and computational methods in genetic epidemiology as a result of technological advances. The ability to sequence genomes allows us to consider the human population as one large pedigree, so that population genetics and the analysis of family data are becoming one and the same thing, requiring a multi-multivariate statistical approach to analyze the big data being produced. In passing, I shall note some of the enormous influences (both good and bad) that R.A. Fisher had on this area of research.

\* <http://darwin.cwru.edu/ref/view.php?id=407&article=Elston+Reprints>