R. TODD OGDEN

Professor, Biostatistics (in Psychiatry)
Vice Chair, Department of Biostatistics
Columbia University, Mailman School of Public Health

ANALYSIS OF SHAPE DATA WITH APPLICATIONS TO MITOCHONDRIA

ABSTRACT:

In many modern data applications there is a need for an objective framework for the analysis of data that can be represented as shapes (or curves or functions, etc.). While standard analytic techniques could be applied to scalar-valued summary measures of such objects, a more objective approach would involve comparing the data objects in shape space (curve space, function space, etc.). This would require the determination of a measure of "distance" between objects, ideally one that respects the topology of the space. Once such metric has been established, many traditional statistical modeling techniques can be applied to such data. This talk will describe some potential metrics for closed curves and propose some corresponding adaptations of statistical inference procedures. The analysis will be applied to data from an experiment in animal cell biology, in which exercise regimen is thought to have an effect on mitochondrial morphology.

BIO: Dr. R. Todd Ogden has interests in a wide variety of topics in both statistical methodology and various application areas. He is currently collaborating with researchers at the New York State Psychiatric Institute on various statistical modeling issues with the analysis of data from brain imaging studies. Other ongoing interests include functional data analysis, nonparametric regression, wavelet methods, statistical modeling, statistical computing, and statistical education. Dr. Ogden received a PhD in Statistics from Texas A&M University in 1994 under the advisement of the late, Emanuel Parzen. He is an elected Member of the International Statistical Institute and a Fellow of the American Statistical Association. He was also a recipient of the H. O. Hartley Award in 2008.

Monday, April 11, 2022
11:00 AM - 12:00 PM, CST
Online webinar only. No meeting room.

CLICK HERE TO REGISTER FOR THE WEBINAR
After registering, you will receive a confirmation email containing information about joining the meeting.
Want to Join the SFSN Listserv? Subscribe Here