Biostatistics faculty member Dr. Usha Govindarajulu presents a new tool for modeling dose-response relationships

In her new publication "Dose-response estimation by smoothing and area under the curve", Dr. Usha Govindarajulu presents a useful tool for researchers and clinicians working with estimation of dose-response or exposure-response relationships. “Over the years there have been many statistical approaches, from a number of fields, that have sought to define relationships between a dose (or exposure) and a response. Previous guidance regarding how to model the area under dose-response curves and how to estimate the area under the curve has been conflicting,”said Dr. Govindarajulu. Software packages that do this often use parametric shapes for estimating the curves, which can allow inappropriate assumptions about the curve’s pattern. Dr. Govindarajulu’s approach uses non-parametric methods that go with the form of the data rather than making assumptions about the curve fit.

This work extends from previous work by Dr. Govindarajulu and colleagues at Harvard School of Public Health, which focused on modeling exposure-response data in survival modeling with non-parametric methods. In this work, Dr. Govindarajulu has extended these methods to non-survival data, so that they can now be used in more common medical and biological research situations. For further information, please see the original article, linked below.

http://www.hoajonline.com/medicalstat/2053-7662/4/7