



Arthur Cohen Lecture

Nonparametric inference under shape constraints: past, present and future

Richard Samworth, University of Cambridge

Friday, March 29, 2024

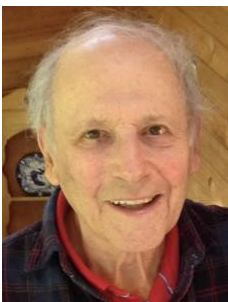
4:00PM – 5:00PM

Reception and Student Poster Competition: 2:30-4:00PM

Fiber Optics Material Research Building, Auditorium

Abstract: Traditionally, we think of statistical methods as being divided into parametric approaches, which can be restrictive, but where estimation is typically straightforward (e.g. using maximum likelihood), and nonparametric methods, which are more flexible but often require careful choices of tuning parameters. The area of nonparametric inference under shape constraints sits somewhere in the middle, seeking in some ways the best of both worlds. I will give an introduction to this active area, providing some history, recent developments and a future outlook.

Bio: Richard Samworth obtained his PhD in Statistics from the University of Cambridge in 2004, and has remained in Cambridge since, becoming a full professor in 2013 and the Professor of Statistical Science in 2017. He currently holds a European Research Council Advanced Grant. Richard's main research interests are in high-dimensional and nonparametric statistics; he has developed methods and theory for shape-constrained inference, missing data, subgroup selection, data perturbation techniques (subsampling, the bootstrap, random projections, knockoffs), changepoint estimation, independence testing and classification, amongst others. He received the COPSS Presidents' Award in 2018, was elected a Fellow of the Royal Society in 2021 and completed his term as co-editor of the *Annals of Statistics* from 2019-2021.



Arthur Cohen (1933-2021) was a brilliant applied and mathematical statistician and a wonderful colleague and leader of Department of Statistics at Rutgers. He spent his career at Rutgers from 1963, and served as the department chair for many years. A world-renowned leader in decision theory, he was known in the research world for blending dynamic applied statistical expertise with rigorous and creative mathematical skills. Among other distinctions, Cohen was honored as a Fellow of the Institute of Mathematical Statistics, the American Statistical Association, and the International Statistical Institute. He served as Editor of the *Annals of Statistics*, and Co-Editor of the *Journal of Multivariate Analysis*. Among his colleagues he was also revered for his integrity, geniality, incisiveness, and an unending passion for statistics.

The Department of Statistics at Rutgers University established an Arthur Cohen Lecture, in Arthur's honor, as one of the major events of the department.

