

## Seminar “Nonparametric Methods and Biostatistics”.

Thursday, May 24th 2018

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### PROGRAMME:

10:00-11:00 h. **BERNSTEIN SMOOTHERS FOR COPULAS AND COPULA DERIVATIVES.** *Paul Janssen, Center for Statistics, Hasselt University, Belgium.*

The asymptotic properties of Bernstein polynomial estimators for copulas and for first and second derivatives of copulas are studied in a number of recent Janssen-Swanepoel-Veraverbeke papers. We will review the results and show how, for example, Bernstein estimators of the first derivative of copulas relate to Bernstein estimators of conditional distributions functions, conditional quantiles and regression functions. We also discuss Bernstein smoothing to obtain estimators for the conditional density and for the cross ratio function (Abrams et al. 2018), which is an important local dependence measure.

11:00-11:30 h. Coffee-Break.

11:30-12:30 h. **MODELING CLUSTERED SURVIVAL DATA WITH A CURE FRACTION.** *Paul Y. Peng, Queen’s Cancer Research Institute, Queen’s University, Canada.*

There is a great deal of recent interests in modeling right-censored clustered survival time data with a possible fraction of cured subjects who are nonsusceptible to the event of interest using marginal mixture cure models. In this talk, I will present some recent work on statistical models for such data, and will focus on extensions of the generalized estimating equation approach to estimate parameters in such models. Some numerical work to demonstrate the finite sample properties of the estimators and the applications of the proposed models are presented. Some remaining issues and future work will be addressed at the end.