

PhD Program in Mathematics, Computer Science, Applications

Prof. Giovanni Parmigiani

Harvard University – Dana Farber Cancer Institute

will teach a 3-lecture course on

Multi-Study Biomarker Analysis

June 12 (14.00–15.30)

Meta-Analysis of High-Throughput Biomarker Studies

- curatedOvarianData: clinically annotated data for the ovarian cancer transcriptome
<http://dx.doi.org/10.1093/database/bat013>
- Comparative meta-analysis of prognostic gene signatures for late-stage ovarian cancer
<https://academic.oup.com/jnci/article-lookup/doi/10.1093/jnci/dju049>
- Consensus on Molecular Subtypes of High-Grade Serous Ovarian Carcinoma
<https://doi.org/10.1158/1078-0432.CCR-18-0784>

June 13 (9-30-11.00)

Multi-Study Performance of Predictions

- Cross-study validation for the assessment of prediction algorithms
<https://academic.oup.com/biostatistics/advance-article/doi/10.1093/biostatistics/kxy044/5092386>
- The impact of different sources of heterogeneity on loss of accuracy from genomic prediction models
<http://dx.doi.org/10.1093/bioinformatics/btu279>
- SimulatorZ: Simulator for Collections of Independent Genomic Data Sets
<https://doi.org/doi:10.18129/B9.bioc.simulatorZ>

June 13 (11.30-13.00)

Multi-Study Machine Learning

- Training replicable predictors in multiple studies
<http://www.pnas.org/lookup/doi/10.1073/pnas.1708283115>
- Merging versus Ensembling in Multi-Study Machine Learning: Theoretical Insight from Random Effects, on arXiv by end of may.