Topic list for Professor Thall’s lectures, Rice University course Stat 630 (GSBS course GS01 0813), Spring Semester 2012. (updated January 5, 2012)

The topics listed below will be covered as time permits. Students are advised that it is very unlikely that all topics listed below will be covered. Additionally, the topics may not be covered in the order given.

1. Monitoring a single outcome in phase II clinical trials
2. Beta-binomial models and methods for binary outcomes [1]
3. Exponential -gamma models and methods for event times [2]
4. Monitoring multiple outcomes in phase II clinical trials: A Dirichlet-multinomial model-based approach [3,4]
5. Dealing with patient heterogeneity in phase II clinical trials
6. Bayesian methods based on analysis of variance models [5]
7. Methods based on Bayesian hierarchical models [6]
8. Phase I-II dose-finding based on efficacy-toxicity trade-offs
9. The homogeneous case: Trinary and bivariate binary outcomes [7-9]
10. Individualized dose-finding incorporating covariates [10]
11. Dose-finding with two agents [11]
12. Dealing with multiple toxicities in phase I using total toxicity burden [12]
13. Utility-based dose-finding
14. Models and methods for two agents with bivariate ordinal efficacy-toxicity outcomes [13]
15. Optimizing rapid treatment of acute ischemic stroke [14]
16. Hybrid designs
17. Optimizing dose and schedule [15-17]
18. Optimizing infusion times [18]
19. Phase II/III select-and-test designs
    1. Binary outcomes [19]
    2. Event time outcomes [20]
    3. Progression-free-survival time and toxicity [21]
20. Seamless phase II/III designs based on early outcomes and survival time [22]
21. Dynamic treatment regimes: Evaluating multi-stage therapies
22. General concepts
23. A prostate cancer trial of 12 two-stage regimes: Design and analysis [23-25]
24. A metastatic renal cancer trial of 6 two-stage regimes [26]
25. A trial of two-stage regimes for acute leukemia based on efficacy and death [27]
26. Bayesian sensitivity analysis for treatment comparisons based on nonrandomized data [28]

References for Professor Thall’s Lectures

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