**DDRD**

**Part A: Declaring Designs**

MIDA

Diagnosis & Diagnosands

**Part B: Canonical Designs**

1. **Measurement models:**
2. Simple Random Sampling
3. Stratified clustered random sampling
4. Text analysis
5. Latent variables
6. RDS / Capture recapture (or some other more complex, unusual design)
7. **Experimental Measurement**
8. Audit experiments
9. List experiments
10. Randomized responses
11. Conjoint Experiments
12. Two player lab experiments
13. **Experimental Designs**
14. k-arm
15. Block-Cluster randomized control trial
16. Factorial design [Example Conjoint experiment for measurement]
17. Encouragement design (IV)
18. Rollout
19. Partial population design for spillover analysis
20. Selective trial (or some other more complex, unusual design)
21. **Observational**
22. Difference in Differences
23. Matching
24. The Regression Discontinuity Design
25. Synthetic control
26. Process Tracing
27. Cross national time series (or some other more complex design)

**C Principles**

1. **Model Principles**
2. Defining null models
3. Make models general (Define models at the vector level)
4. Spillovers are potential outcomes
5. Compliance is a potential outcome
6. Attrition is a potential outcome
7. Specify your manipulands
8. **Inquiry Principles:**
9. No causation without manipulation
10. You are responsible for your estimand
11. Know the A in ATE
12. Know the L in LATE
13. PATEs are not SATEs
14. Inquiries can be open questions
15. Inquiries should have answers (not: what causes Y? not is it robust?)
16. Answers to inquiries should be defined. (eg not: the average Y for empty group G – example of model breakdown)
17. Inquiries can be formed over inferences (though you probably don’t want to do that)
18. Decisions as inquiries. Eg multiarm bandit; should I proceed after a pilot?
19. How many questions should I ask?
20. **Data Principles**
21. Systematic data collection is not random sampling
22. Maintain balance between treatment groups: Keep treatment and control groups parallel
23. Confounded treatments cause bias: (DD, RDD, factorial)
24. Power Principles: Blocking improves power
25. Power Principles: Clusters reduce power
26. Power Principles: Estimation strategies matter for power too
27. Power Principles: Factorial designs are more powerful than m arm designs
28. Power Principles: Gains from Pretreatment Data
29. Power Principles: Should you take interim measures? How much N how much T?
30. **Analysis Principles**
31. (Balance fallacy) Assess imbalance using d not p
32. Unbiasedness is not affected by imbalance but conditional bias is
33. Use controls for prognostic pretreatment covariates
34. Including pretreatment controls can introduce bias in observational analysis (Pearl)
35. Conditioning on post treatment variables can introduce bias
36. Use random effects instead of fixed effects for superpopulation quantities
37. Heterogeneous propensities cannot be ignored: OLS, IPW and HT
38. A reasoned bases for inference 1: Correctly identify the source of uncertainty.
39. A reasoned bases for inference 2: ri is exact
40. A reasoned bases for inference 2: permutation tests help with the sharp null of no effect; otherwise ri needs a model
41. A reasoned bases for inference 3: Neyman Variance is conservative for sample variance
42. Cluster standard errors at the level of treatment assignment
43. A valid test need not be a powerful test
44. Deaton’s critique: Unbiased variance estimates do not mean correct p values
45. Confidence intervals should be model consistent
46. You can check whether confidence intervals are correct, given the model
47. No evidence of an effect is not evidence of no effect (unless you are Bayesian)
48. Gelman’s lament. The difference between significant and not significant is not itself significant.
49. **Cross MIDA Principles**
50. The substantive model should be more general than the answer strategy
51. As ye randomize so shall ye analyze
52. Don’t confuse observational and experimental variation
53. Selective reporting Introduces bias
54. There is a bias-variance tradeoffs
55. Treat spillovers as a design challenge
56. Validate your models