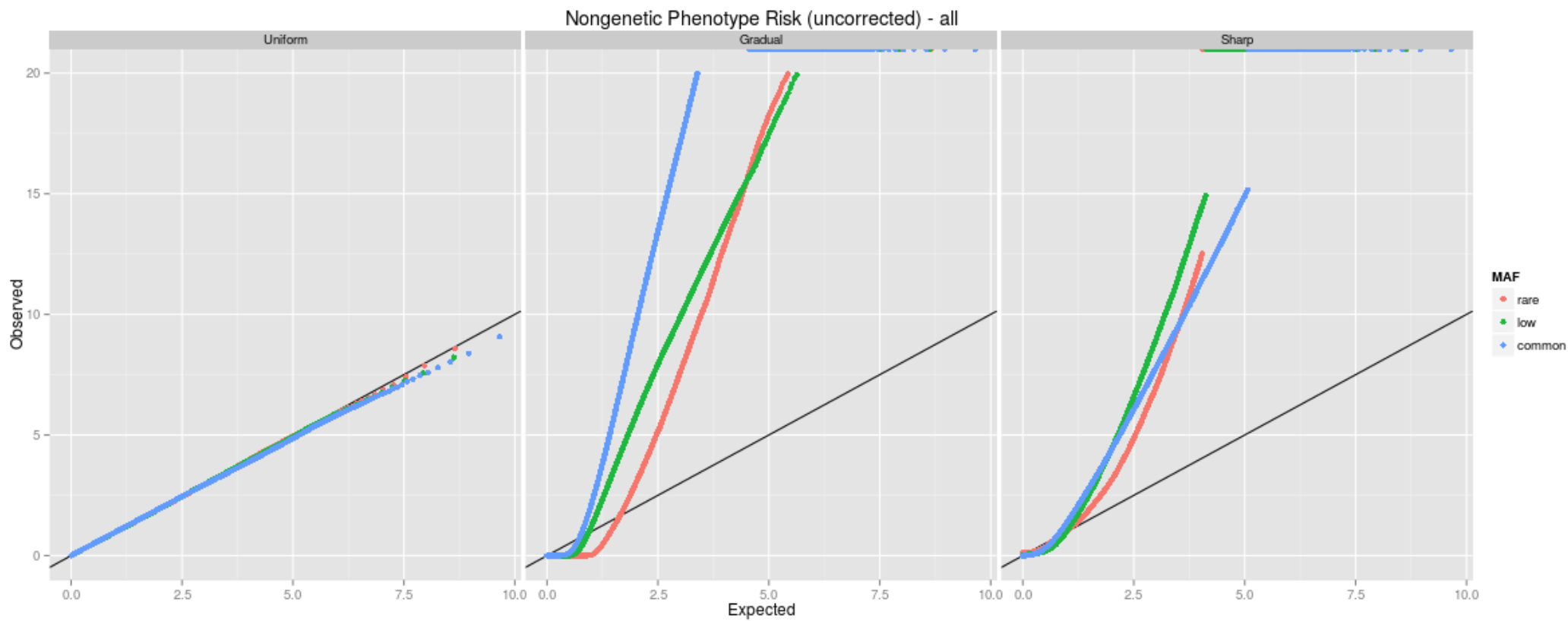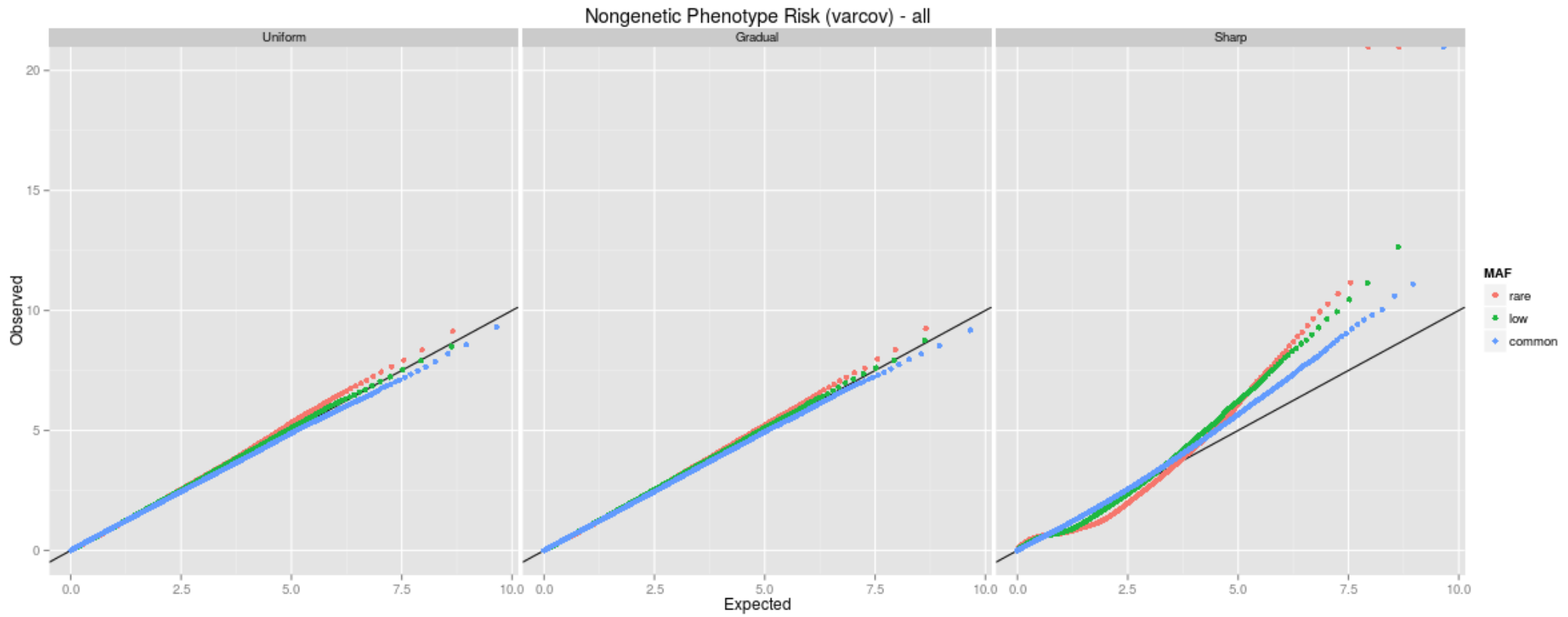# To discuss

- Listgarten paper
  - FaST LMM
- New test statistic scaling estimate
  - See pdf
  - This is key for controlling type I error for rare variants. See comparison of Gold standard with scaling vs without scaling.
  - Still using asymptotics
- Plots: Key points
  - Uncorrected < PCA < Jaccard < GoldStandard
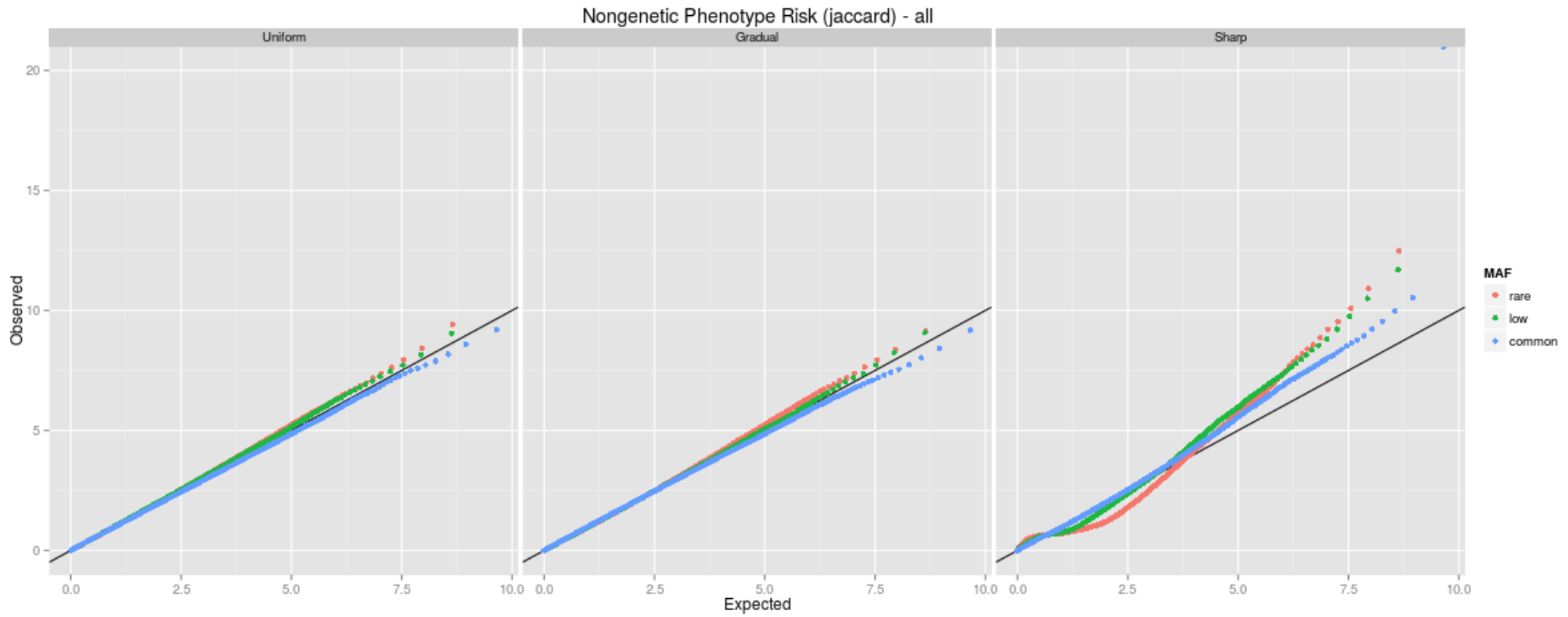 - Jaccard still not controlling type I error as well as Gold standard, but outperforming (very slightly) PCA
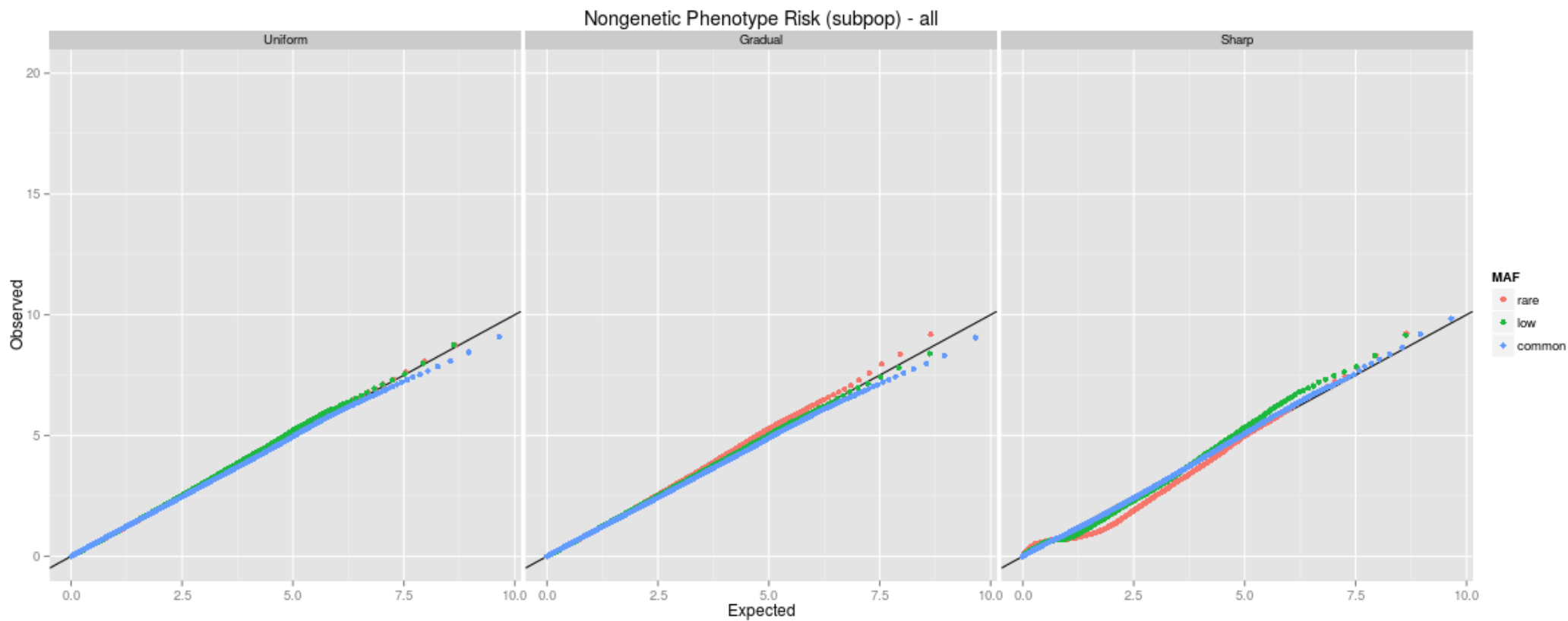
Uncorrected

Nongenetic Phenotype Risk (uncorrected) - all

PCA

Nongenetic Phenotype Risk (varcov) - all

Jaccard

Nongenetic Phenotype Risk (jaccard) - all

Subpop label (gold standard)

Nongenetic Phenotype Risk (subpop) - all

Subpop label (gold standard) (unscaled test statistic)