R Notebook

Abstract;

```r
head(derek)
```

```
##          start       stop hdl ldl tg tc
## 1  chr1:751343 chr1:1251343   0   0  0  0
## 2 chr1:1251344 chr1:1751344   0   0  0  0
## 3 chr1:1751345 chr1:2251345   0   0  0  0
## 4 chr1:2251346 chr1:2751346   0   0  0  0
## 5 chr1:2751347 chr1:3251347   0   0  0  0
## 6 chr1:3251348 chr1:3751348   0   0  0  0
```

```r
head(ukbb)
```

```
##          start       stop hdl ldl tg tc
## 1  chr1:751343 chr1:1251343   1   1  1  1
## 2 chr1:1251344 chr1:1751344   1   0  1  0
## 3 chr1:1751345 chr1:2251345   1   1  1  1
## 4 chr1:2251346 chr1:2751346   1   0  1  0
## 5 chr1:2751347 chr1:3251347   1   0  1  0
## 6 chr1:3251348 chr1:3751348   0   0  0  0
```

```r
head(mvp)
```

```
##          start       stop hdl ldl tg tc
## 1  chr1:751343 chr1:1251343   1   1  1  1
## 2 chr1:1251344 chr1:1751344   1   0  1  0
## 3 chr1:1751345 chr1:2251345   1   1  1  1
## 4 chr1:2251346 chr1:2751346   1   0  1  0
## 5 chr1:2751347 chr1:3251347   1   1  1  1
## 6 chr1:3251348 chr1:3751348   0   0  0  0
```

```r
sum(rowSums(mvp[,c(3:6)])>0)
```

```
## [1] 5007
```

```r
sum(rowSums(derek[,c(3:6)])>0)
```

```
## [1] 318
```

```r
sum(rowSums(mvp[,c(3:6)])==0)
```

```
## [1] 576
```

```r
sum(rowSums(mvp[,c(3:6)]==0)!=0)
```

```
## [1] 2347
```

We identified XXX novel loci associated with lipids with summary-level data using mashR. FInd the number of nonzero rows in MVP that are zero in derek

```r
mvp_list=which(rowSums(mvp[,c(3:6)])>0)
d_list=which(rowSums(derek[,c(3:6)])>0)
length(setdiff(mvp_list,d_list))
```

```
## [1] 4689
```

We increase the total loci linked to lipids by XXX-fold.

```r
sum(rowSums(mvp[,c(3:6)])!=0)/sum(rowSums(derek[,c(3:6)])!=0)
```

```
## [1] 15.74528
```

In joint replication, XXX of XXX total loci (XXX%) detected in 297,626 MVP participants replicated in XXX UK Biobank participants,

```r
mvp_list=which(rowSums(mvp[,c(3:6)])>0)
ukb_list=which(rowSums(ukbb[,c(3:6)])>0)

length(mvp_list)
```

```
## [1] 5007
```

```r
length(ukb_list)
```

```
## [1] 3935
```

```r
length(intersect(mvp_list,ukb_list))
```

```
## [1] 3761
```

```r
length(intersect(mvp_list,ukb_list))/length(mvp_list)
```

```
## [1] 0.7511484
```

and XXX of XXX total loci (XXX%) detected in UK Biobank replicated in MVP.

```r
length(intersect(mvp_list,ukb_list))/length(ukb_list)
```

```
## [1] 0.9557814
```