

# Uk3

Here we plot the correlation matrix and the first 3 eigenvectors of Uk3.

```
library('knitr')
```

```
## Warning: package 'knitr' was built under R version 3.2.5
```

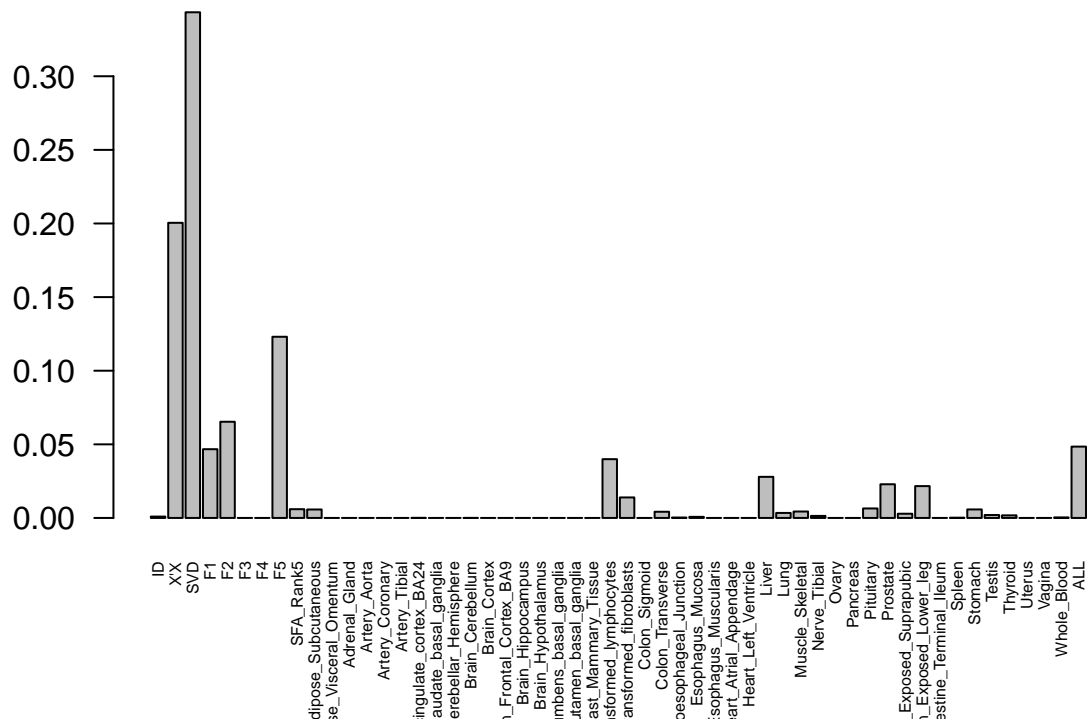
```
knitr::opts_chunk$set(cache=TRUE)
opts_chunk$set(fig.path = "/Users/sarahurbut/Dropbox/PaperEdits/Paper/NGRevision/Figureswithres/")
covmat=readRDS("../Data_vhat/covmatwithvhat.rds")

z.stat=read.table("../Data/maxz.txt")
names=colnames(z.stat)
pis=readRDS("../Data_vhat/piswithvhat.rds")$pihat
pi.mat=matrix(pis[-length(pis)],ncol=54,nrow=22,byrow = T)

names=colnames(z.stat)
colnames(pi.mat)=c("ID","X'X","SVD","F1","F2","F3","F4","F5","SFA_Rank5",c(names,"ALL"))

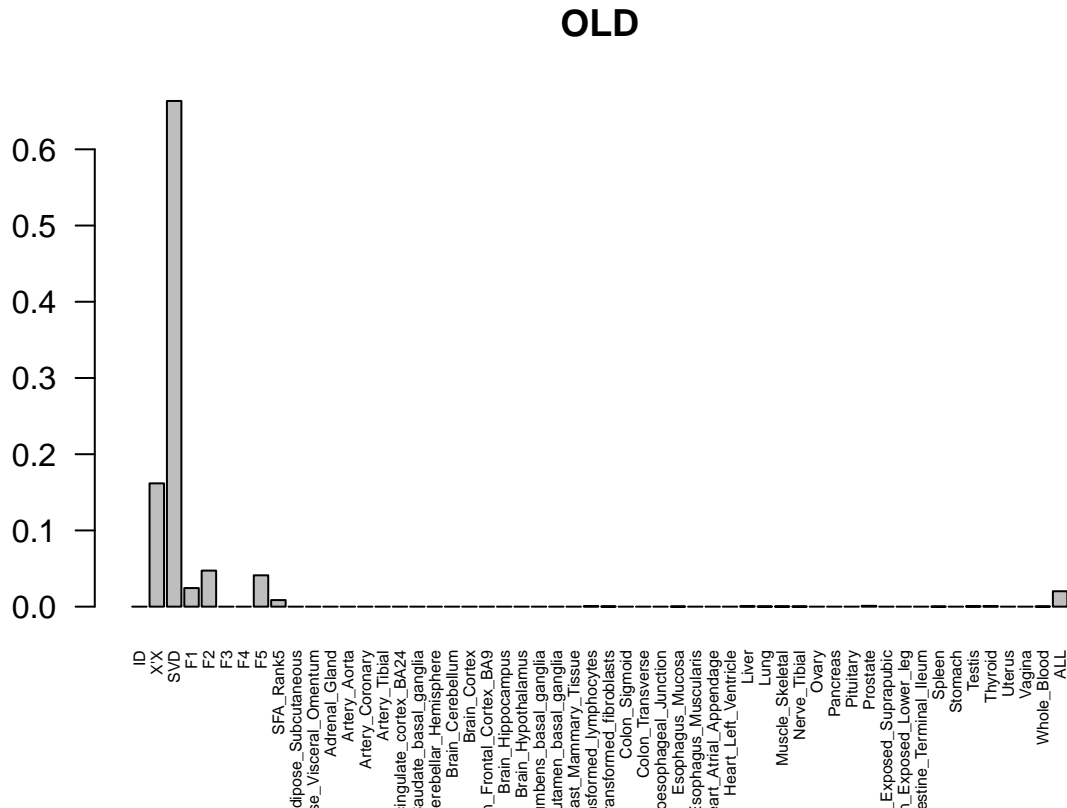
barplot(colSums(pi.mat),main='WithVmat',las=2,cex.names=0.5)
```

## WithVmat



```
oldpis=readRDS("../Results_Data//piswithzero.rds")$pihat
pi.matold=matrix(oldpis[-length(oldpis)],ncol=54,nrow=22,byrow = T)
```

```
colnames(pi.matold)=c("ID", "X'X", "SVD", "F1", "F2", "F3", "F4", "F5", "SFA_Rank5", c(names, "ALL"))
barplot(colSums(pi.matold), main='OLD', las=2, cex.names=0.5)
```



```
library(gplots)
library(ggplot2)
library('colorRamps')
#install.packages("fields")
library(fields)
k=3
hclust.2=function (d, method = "average", members = NULL) {hclust(d, method, members)}
x=cov2cor(covmat[[k]])
x[x<0]=0
colnames(x)=names
rownames(x)=names

h=read.table("../Analysis/uk3rowindices.txt")[,1]
```

Now we produce the heatmap. Note that this is flipped in the paper:

```
smat=(x[(h),(h)])
smat[lower.tri(smat)] <- NA

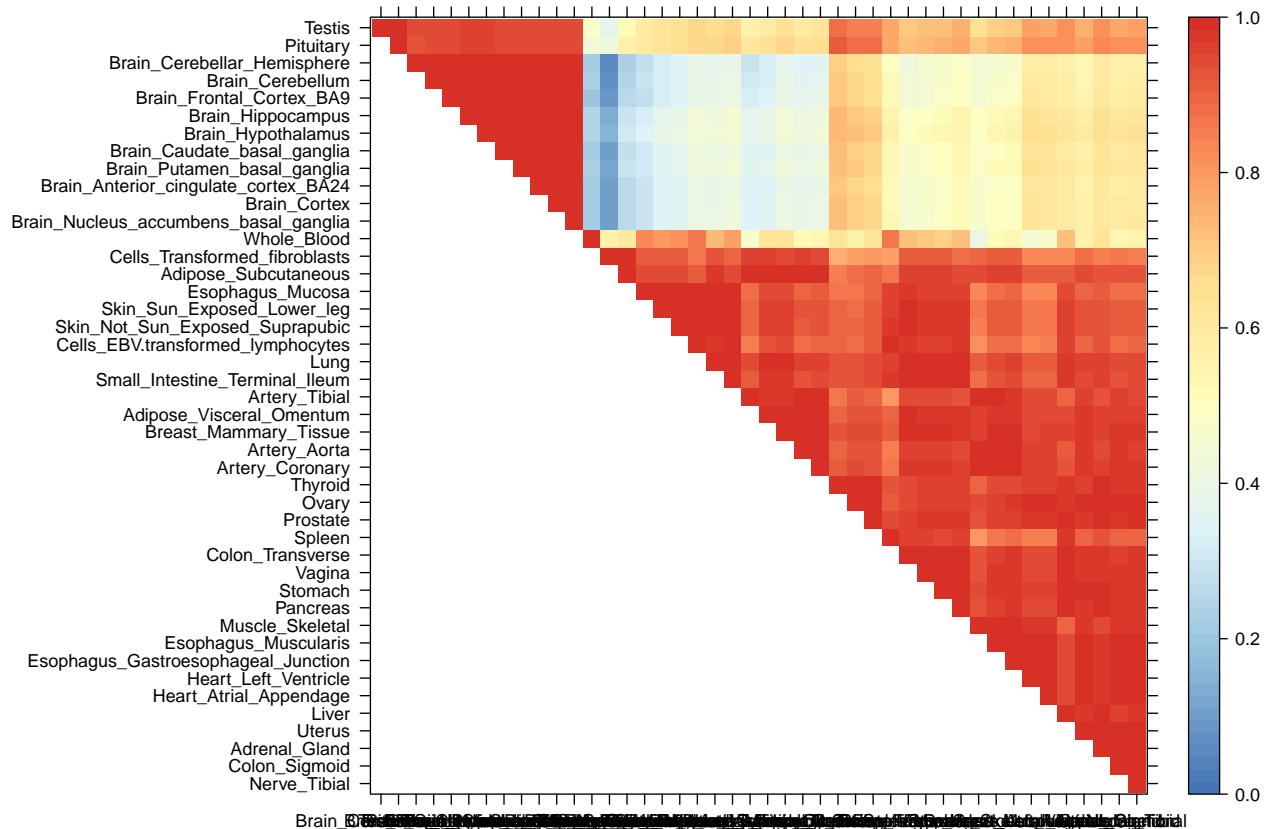
library(lattice)
```

```
#print(levelplot(smat,col.regions = jet.colors,xlab = "",ylab = "",colorkey = TRUE))

#clrs <- colorRampPalette(rev(c("purple", "#FC8D59", "#FEE090", "#FFFFBF", "#E0F3F8", "#91BFDB", "#4575B4"))))

clrs <- colorRampPalette(rev(c("#D73027", "#FC8D59", "#FEE090", "#FFFFBF",
                             "#E0F3F8", "#91BFDB", "#4575B4"))))(64)

lat=x[rev(h),rev(h)]
#lat=x[h,h]
lat[lower.tri(lat)] <- NA
n=nrow(lat)
print(levelplot(lat[n:1,],col.regions = clrs,xlab = "",ylab = "",colorkey = TRUE,at=seq(0,1,length.out=
```



```
#print(levelplot(lat,col.regions = clrs,xlab = "",ylab = "",colorkey = TRUE))
```

Now let's do the eigenplots:

```
missing.tissues=c(7,8,19,20,24,25,31,34,37)
color.gtex=read.table("../Data/GTExColors.txt",sep = '\t', comment.char = '')[-missing.tissues,]

k=3
vold=svd(covmat[[k]])$v;u=svd(covmat[[k]])$u

v=vold[h,]##shuffle so correct order
names=names[h]
```

```

color.gtex=color.gtex[h,]
for(j in 1:3){
  barplot(v[,j]/v[,j][which.max(abs(v[,j]))],names="",cex.names=0.5,las=2,main=paste0("EigenVector",j,"Uk

```

### EigenVector1Uk3

