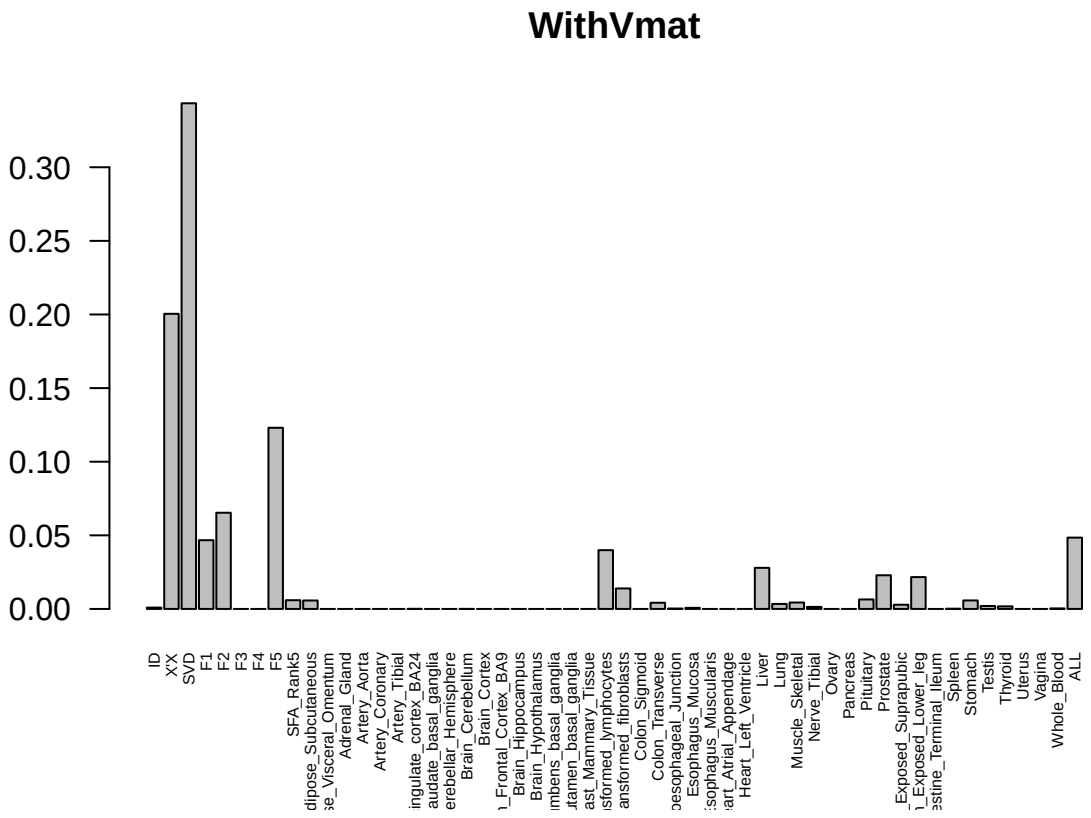
Uk3

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)
```

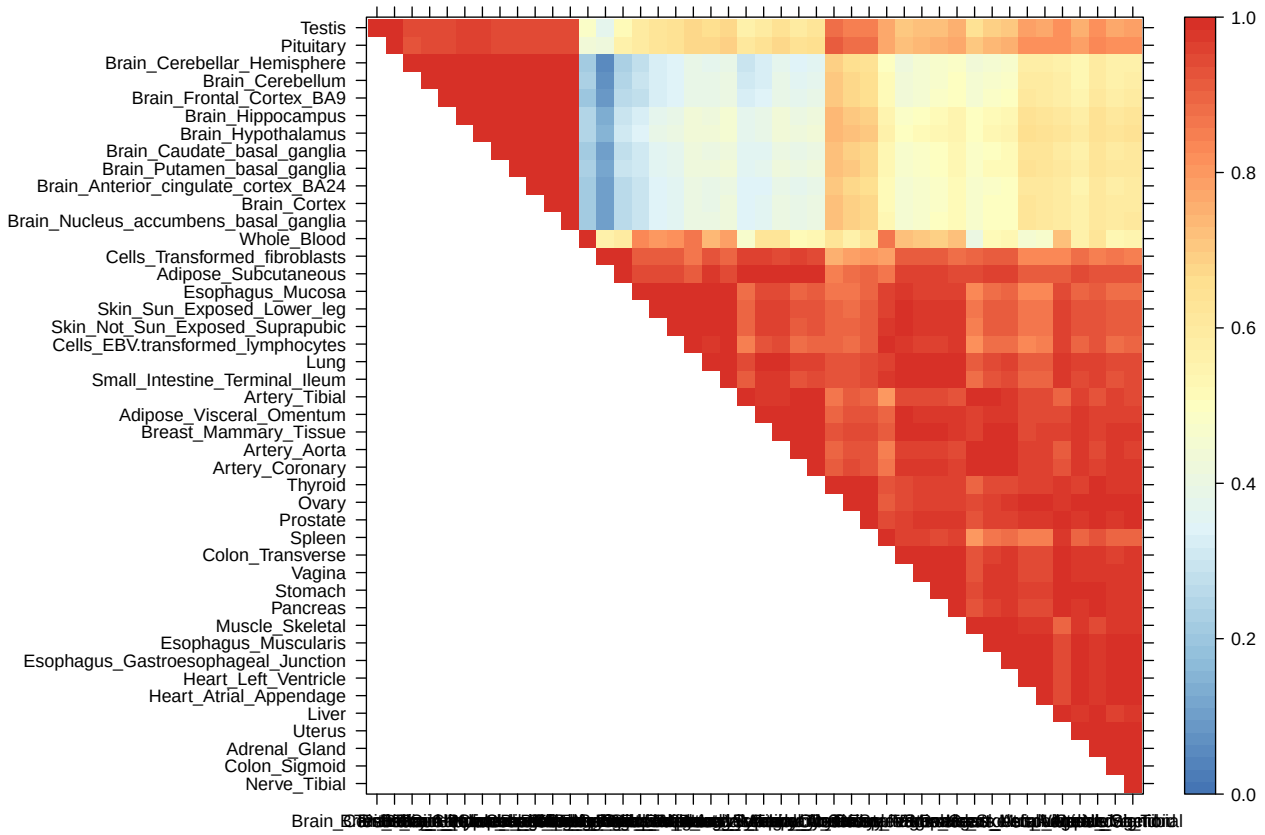



```
library(gplots)
library(ggplot2)
library('colorRamps')
```

```
#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 orduce the heatmap. Note that this is flipped in the paper:

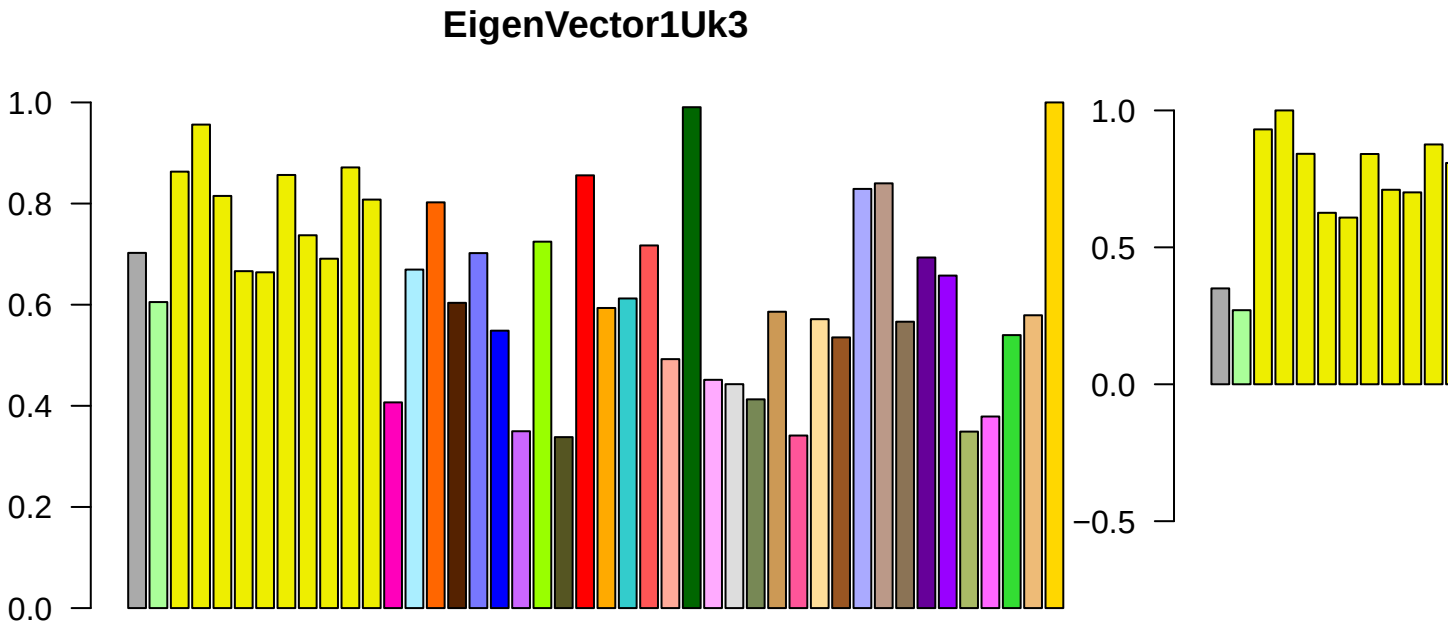
```
smat=(x[(h),(h)])
smat[lower.tri(smat)] <- NA

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=
```

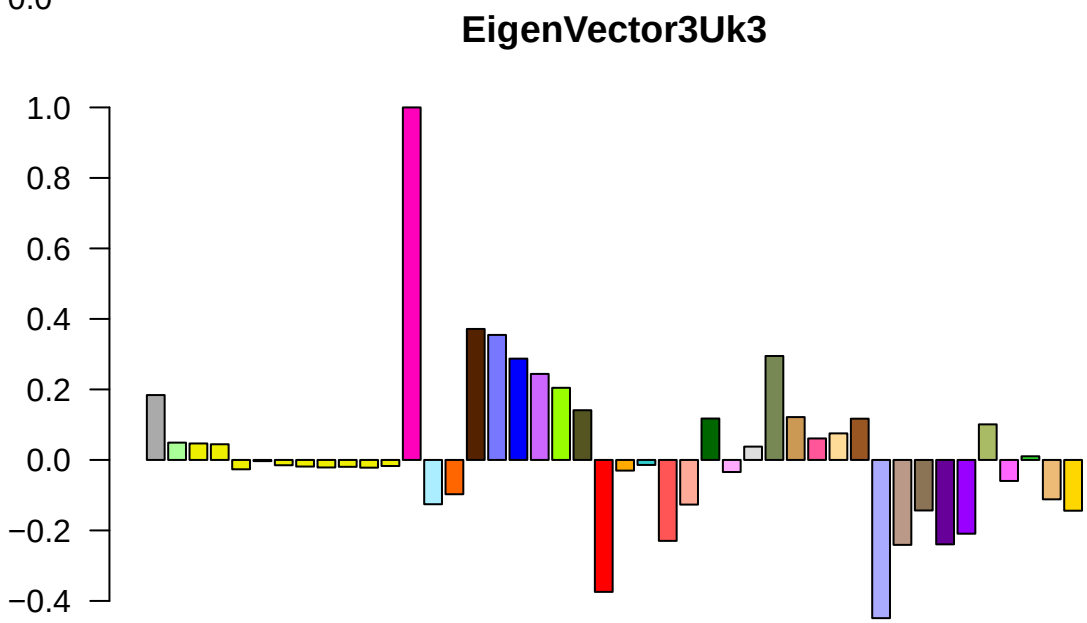



```
#print(levelplot(lat,col.regions = clrs,xlab = "",ylab = "",colorkey = TRUE))
```

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
1.0
0.8
0.6
0.4
0.2
0.0
1.0
0.5
0.0
−0.5


EigenVector3Uk3
1.0
0.8
0.6
0.4
0.2
0.0
−0.2
−0.4