Uk2

Here we plot the correlation matrix and the first 3 eigenvectors of Uk2. Recall, UK2 is the second most common pattern of sharing.

```
library('knitr')

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)
```

```
##
## Attaching package: 'gplots'


## The following object is masked from 'package:stats':
##
##     lowess


## Loading required package: spam


## Loading required package: grid


## Spam version 1.4-0 (2016-08-29) is loaded.
## Type 'help( Spam)' or 'demo( spam)' for a short introduction
## and overview of this package.
## Help for individual functions is also obtained by adding the
## suffix '.spam' to the function name, e.g. 'help( chol.spam)'.


##
## Attaching package: 'spam'


## The following objects are masked from 'package:base':
##
##     backsolve, forwardsolve


## Loading required package: maps


## [1] 0.2004572
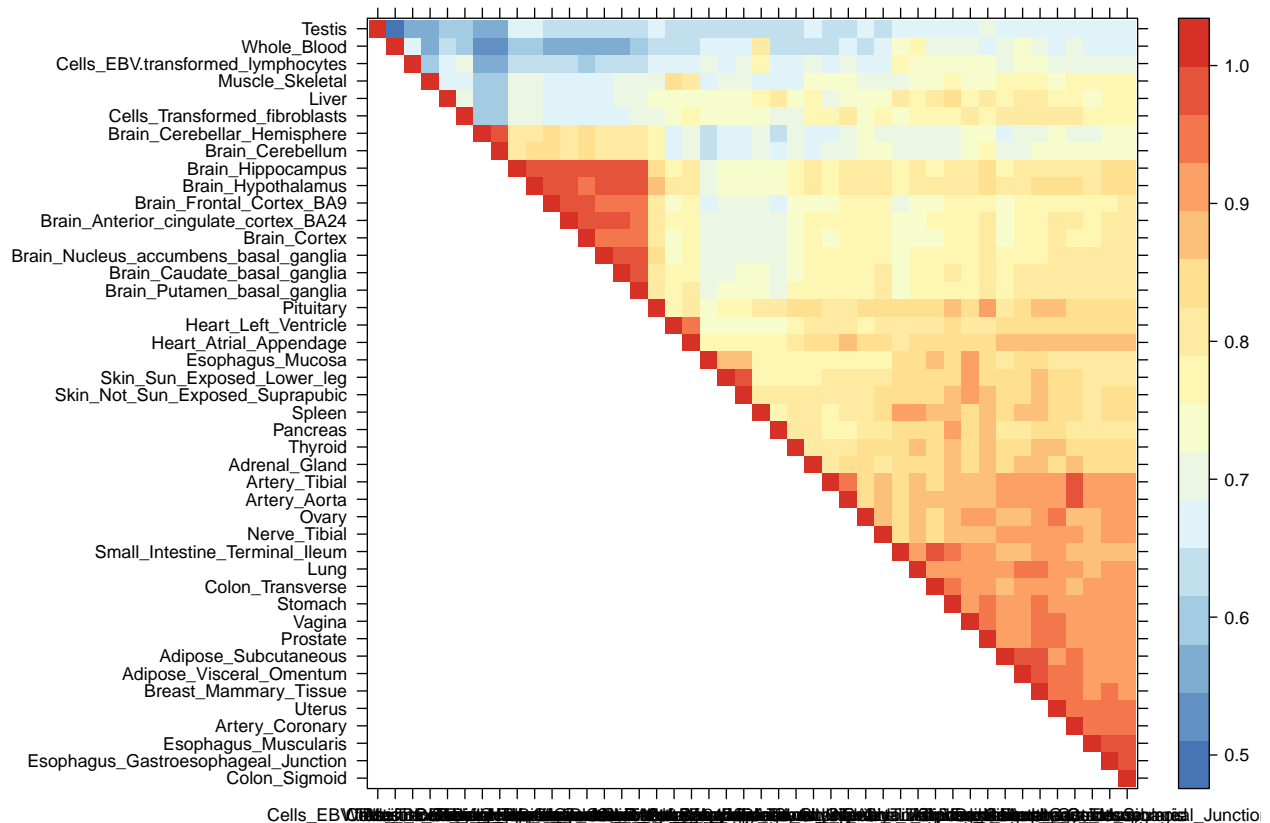```

Here we make the lattice plot:

```r
library(lattice)


clrs <- colorRampPalette(rev(c("#D73027","#FC8D59","#FEE090","#FFFFBF",
                               "#E0F3F8","#91BFDB","#4575B4")))(64)
#clrs[63:64] <- "darkviolet"
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))
```



```r
#print(levelplot(lat,col.regions = clrs,xlab = "",ylab = "",colorkey = TRUE))
```
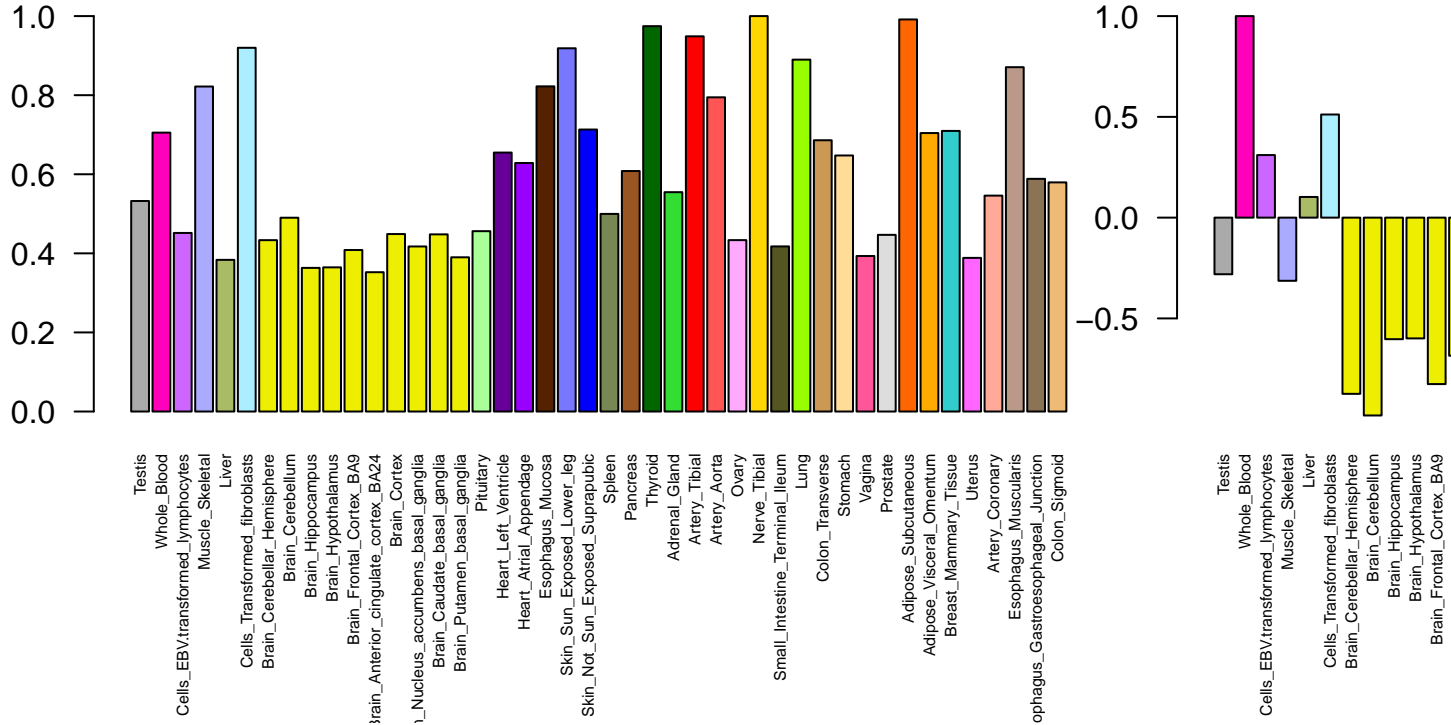
And the SVD Plots:

```r
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,]
col = as.character(color.gtex[,2])


k=2
h=read.table(paste0("../../Data/uk",k,"rowIndices.txt"))[,1]
for(g in 1:3){
v=svd(covmat[[k]])$v[h,];d=svd(covmat[[k]])$d
#rownames(v)=colnames(v)=names[h]
```
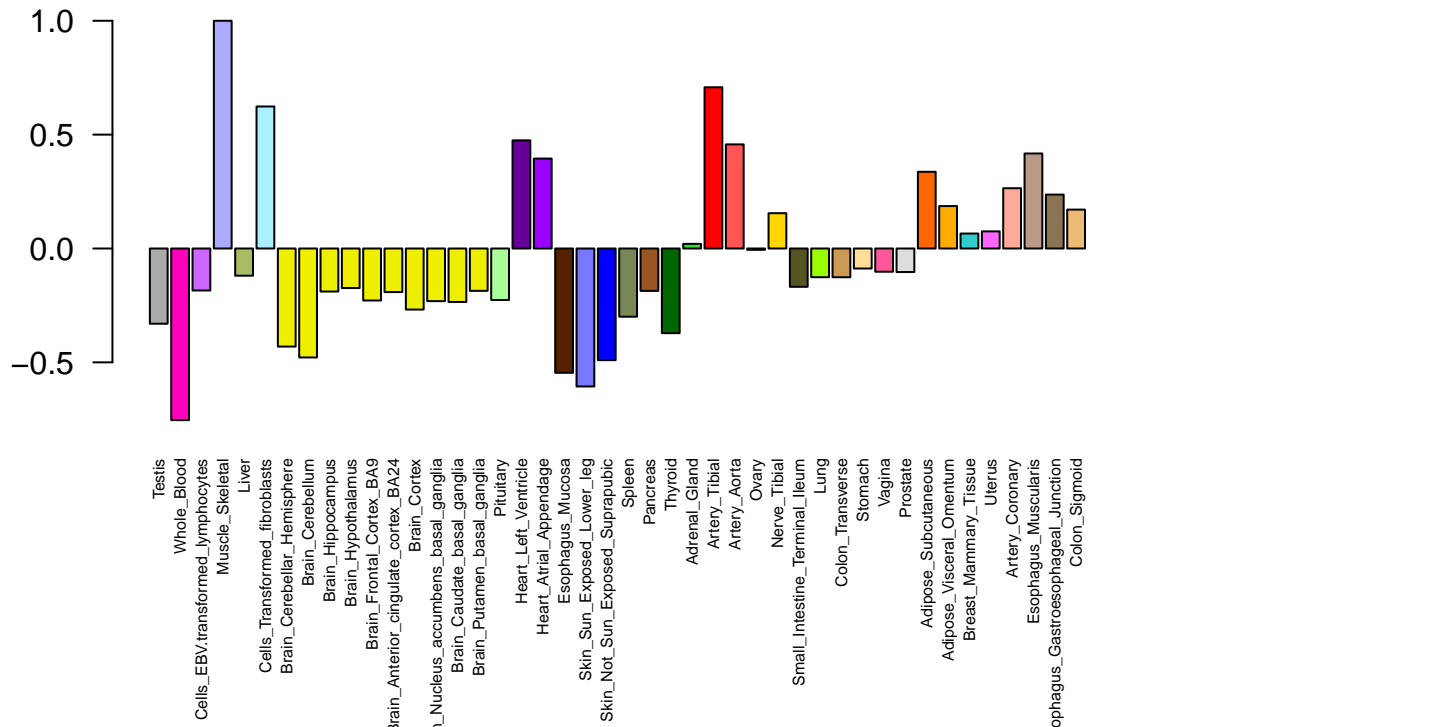
```
par(mar=c(8,4.1,4.1,2.1))
barplot(v[,g]/v[which.max(abs(v[,g])),g],las=2,main=paste("Eigenvector",g,"of Uk",k),cex.names = 0.5,col
```

Eigenvector 1 of Uk 2

Eigenvector 3 of Uk 2

```r
(d^2/sum(d^2))[1:3]
```

```
## [1] 0.995080705 0.001505785 0.000828585
```