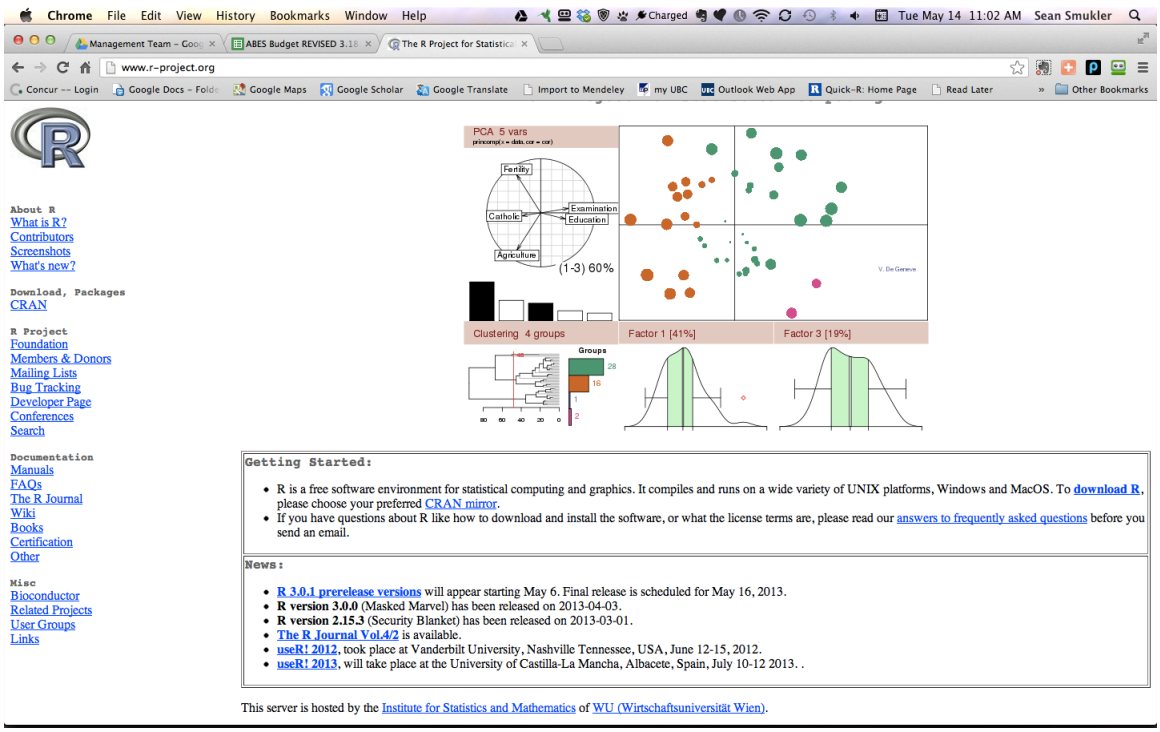
# Landscape Assessment Workshop Part 2

## Workshop Resources

https://app.sugarsync.com/wf/D048412_4571940_487473

## Download R




Select your nearest download site

| | |
|---|---|
| http://mirrors.webhostinggeeks.com/cran/ | webhostinggeeks |
| Mexico | |
| http://cran.itam.mx/ | Instituto Tecnologico Autonomo de Mexico |
| http://www.est.colpos.mx/R-mirror/ | Colegio de Postgraduados, Texcoco |
| Netherlands | |
| http://cran.xl-mirror.nl/ | XL-Data, Amsterdam |
| http://cran-mirror.cs.uu.nl/ | Utrecht University |

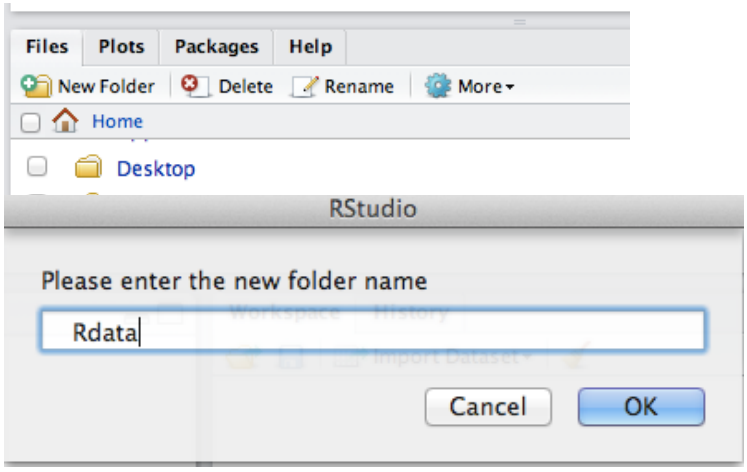
Download the latest version

R-3.0.0.pkg (latest version)
MD5-hash: 7e26aa38e940b6c84ef9f50098541fea
(ca. 64MB)

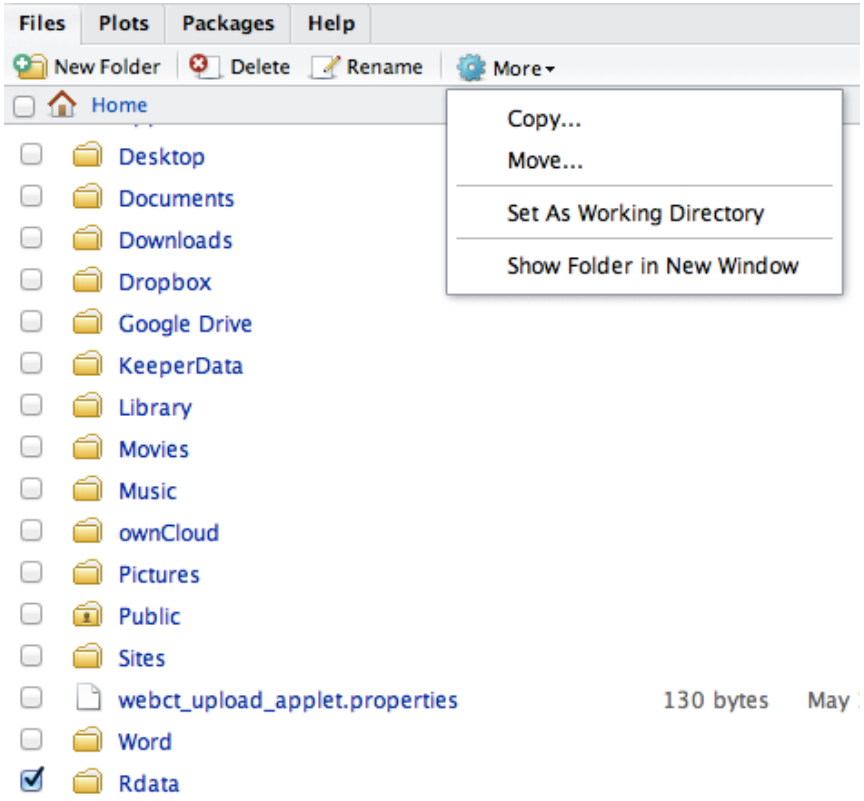
## Download R-Studio


http://www.rstudio.com/ide/download/

## Create a file for your data




## Set working directory

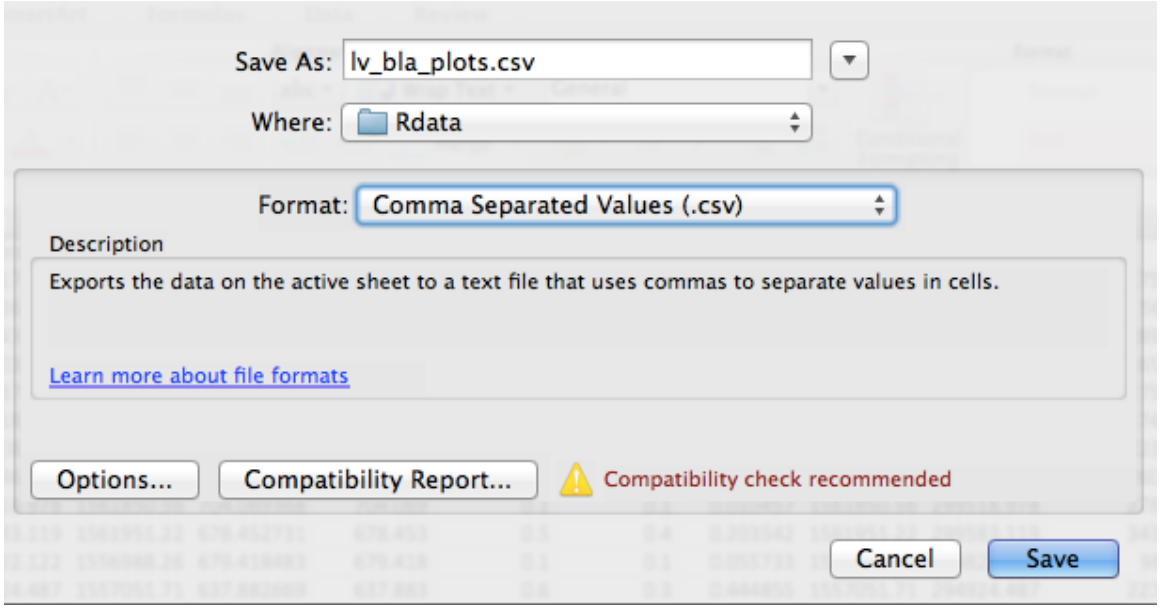



or

setwd("~/Rdata")

## Download Files from GeoNode

http://vssweb3.landfood.ubc.ca/data/geonode:lv_bla_plots

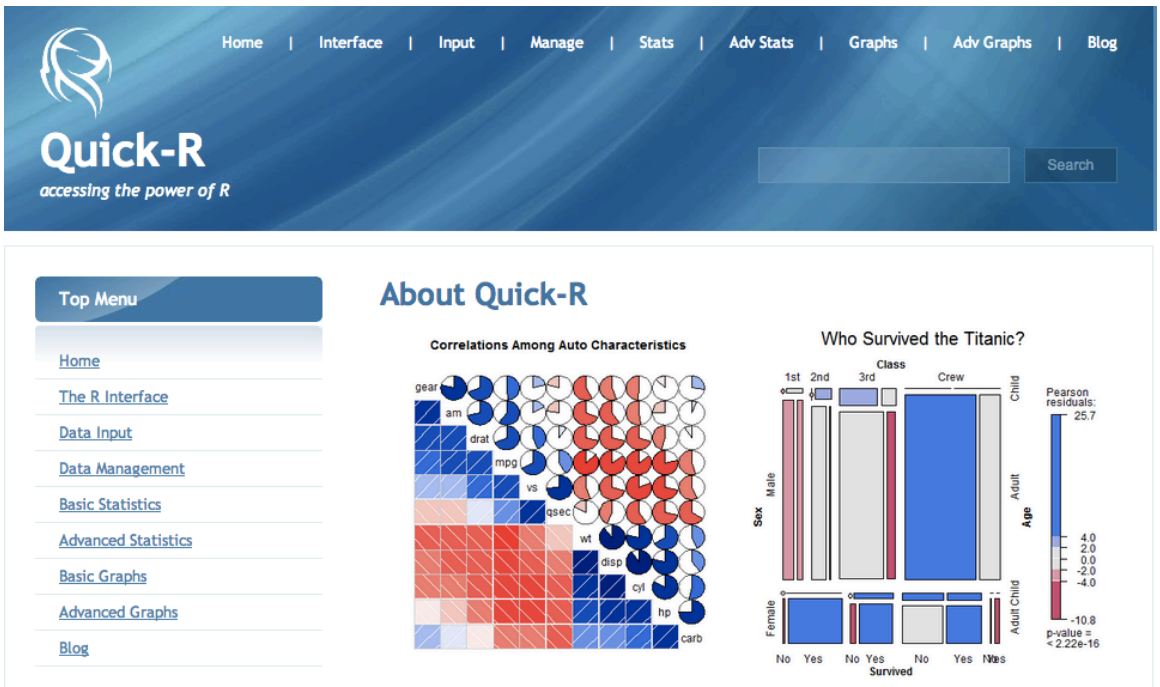



## Open the file in R

```
LBA <- read.csv("~/Rdata/lv_bla_plots.csv")

LBA[1:4,1:4]
```

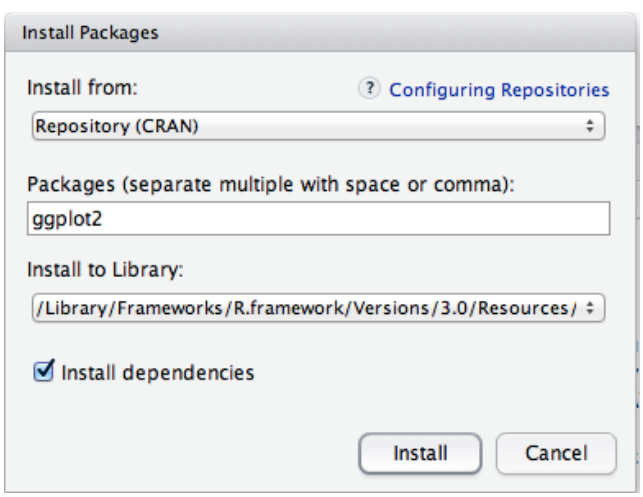
## R resources




## Examine data

http://www.statmethods.net/stats/descriptives.html

## Install Packages



http://docs.ggplot2.org/current/

## Examine data

```
summary(LBA$SlopeAvg)

#Colored Histogram with Different Number of Bins
hist(LBA$SlopeAvg, breaks=12, col="red")


# Pie Chart from data frame with Appended Sample Sizes
mytable <- table(LBA$VegStruct)
lbls <- paste(names(mytable), "\n", mytable, sep="")
pie(mytable, labels = lbls,
   main="Pie Chart LULC\n (with sample sizes)")
```

## Simplify Land Use Land Cover

```
summary (LBA$VegStruct)

LBA$LULC.simple<-LBA$VegStruct

LBA$LULC.simple[LBA$LULC.simple== c("Wooded_grassland")]<-"Woodland"


shouldBecomeOther<-!(LBA$LULC.simple %in% c("Agroforestry",
"Cropland","Forest","Grassland","Woodland"))

LBA$LULC[shouldBecomeOther]<- "Other"


tmp<-as.character(LBA$LULC.simple)
tmp[shouldBecomeOther]<-"Other"
LBA$LULC.simple<-factor(tmp)

summary (LBA$LULC.simple)

library(plotrix)
mytable <- table(LBA$LULC.simple)
lbls <- paste(names(mytable), "\n", mytable, sep="")
pie3D(mytable,labels=lbls,explode=0.1,
```

```
    main="Pie Chart of Slope ")
```

## Graphing results ggplot2

http://docs.ggplot2.org/current/

```
library (ggplot2)

#####################################
# make boxplots for Slope (Canopy_Cov) by LULC #
#####################################

p <- ggplot(LBA, aes(factor(LULC), SlopeAvg))

p + geom_boxplot()

bplot <- ggplot(LBA, aes(LULC.simple, Canopy_Cov))
#Sets the ggplot (dataframe, aes(x,y))

bplot + geom_boxplot(fill = "#E1EBF1", outlier.colour = "black", outlier.shape = 19,
outlier.size = 2) + theme_bw() + labs(title = "Canopy Cover Observed in LBA", y =
"Canopy Cover (%)", x = NULL) + theme(plot.title = element_text(size = rel(2), vjust
= 2)) + theme(axis.text.x = element_text(size = rel(1.5), angle = 45, vjust = 1, hjust =
1))
#Standard box


#################################################
# regression of canopy vs. water infiltration (Canopy_Cov x Infiltrati) #
#################################################

p <- qplot(Canopy_Cov, Infiltrati, data = LBA)

# Fixed slopes and intercepts
p + geom_abline() # Can't see it - outside the range of the data


#############################################################
# spatial analysis
#############################################################

#simple map of plots
plot(LBA$X_Coord, LBA$Y_Coord, asp=1, main="Map of LBA Plots")
```