BBall Season Presentation

Sam Eckhardt and Joey Miranda

Sunday, October 05, 2014

```
library(XML)
library(ggmap)
```

```
## Loading required package: ggplot2
```

```
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
##
## The following objects are masked from 'package:stats':
##
##     filter, lag
##
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

The Data

The Data we have has been recieved from espn.com. It inclu?get_mapdes the season statistics for two conferences, the Big 12 and the West Coast Conference, from the season of 2001-2002 to the season of 2012-2013.

Location of Teams With Points in Team Color

```
# Where exactly are these cities on the US map? Let's plot the cities of these teams

location=c(-125,24.207,-70,50) # It took a bit to figure these coordinates out - zoom to the appropriat
# and find coordinates from the export link

map=get_map(location=location,maptype="roadmap",source="google")
```

```
## Warning: bounding box given to google - spatial extent only approximate.
```

```
## converting bounding box to center/zoom specification. (experimental)
## Map from URL : http://maps.googleapis.com/maps/api/staticmap?center=37.1035,-97.5&zoom=4&size=%20640
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
```

```
usmap=ggmap(map)
locs=geocode(as.character(unique(Gamestatistics$City)))
```

```
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Morgantown,+WV&senso
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Lubbock,+TX&sensor=fa
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Austin,+TX&sensor=fal
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Fort+Worth,+TX&senso
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Stillwater,+OK&senso
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Norman,+OK&sensor=fal
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Manhattan,+KS&sensor=
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Ames,+IA&sensor=false
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Waco,+TX&sensor=false
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Lawrence,+KS&sensor=
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Santa+Clara,+CA&sens
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=San+Francisco,+CA&se
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=San+Diego,+CA&senso
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Moraga,+CA&sensor=fa
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Portland,+OR&sensor=
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Malibu,+CA&sensor=fa
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Stockton,+CA&sensor=
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Los+Angeles,+CA&sens
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## .Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Provo,+UT&sensor=fal
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=Spokane,+WA&sensor=fa
## Google Maps API Terms of Service : http://developers.google.com/maps/terms
```

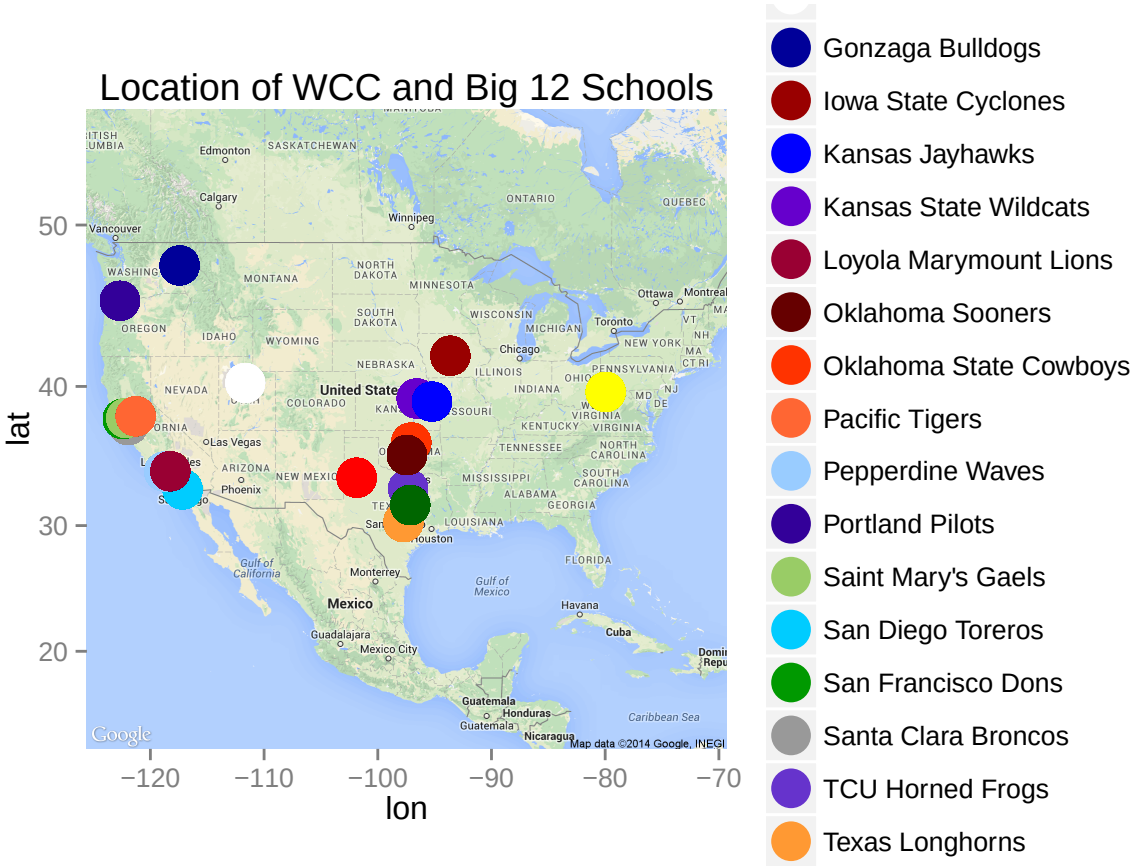
```
locs$City=unique(Gamestatistics$City)
Gamestatistics$lat=locs$lat[ match(Gamestatistics$City,locs$City)]# bring latitude and longitude inform
Gamestatistics$lon=locs$lon[ match(Gamestatistics$City,locs$City)]

levels(Gamestatistics$Team) # note the sequence of teams and arrange the colors in palette in correspon
```

```
##  [1] "Baylor Bears"               "Brigham Young Cougars"
##  [3] "Gonzaga Bulldogs"           "Iowa State Cyclones"
##  [5] "Kansas Jayhawks"            "Kansas State Wildcats"
##  [7] "Loyola Marymount Lions"     "Oklahoma Sooners"
##  [9] "Oklahoma State Cowboys"     "Pacific Tigers"
## [11] "Pepperdine Waves"           "Portland Pilots"
## [13] "Saint Mary's Gaels"         "San Diego Toreros"
```

```
## [15] "San Francisco Dons"          "Santa Clara Broncos"
## [17] "TCU Horned Frogs"            "Texas Longhorns"
## [19] "Texas Tech Red Raiders"      "West Virginia Mountaineers"
```

```
 # The plot
teampalette <- c("#006600","#FFFFFF","#000099","#990000","#0000FF","#6600CC","#990033","#660000","#FF33
```

```
usmap+geom_point(data=Gamestatistics,aes(x=lon,y=lat,color=Team),size=7)+ ggtitle("Location of WCC and
  scale_color_manual(values=teampalette) # add theme(legend.position="none") if you don't want the leg
```



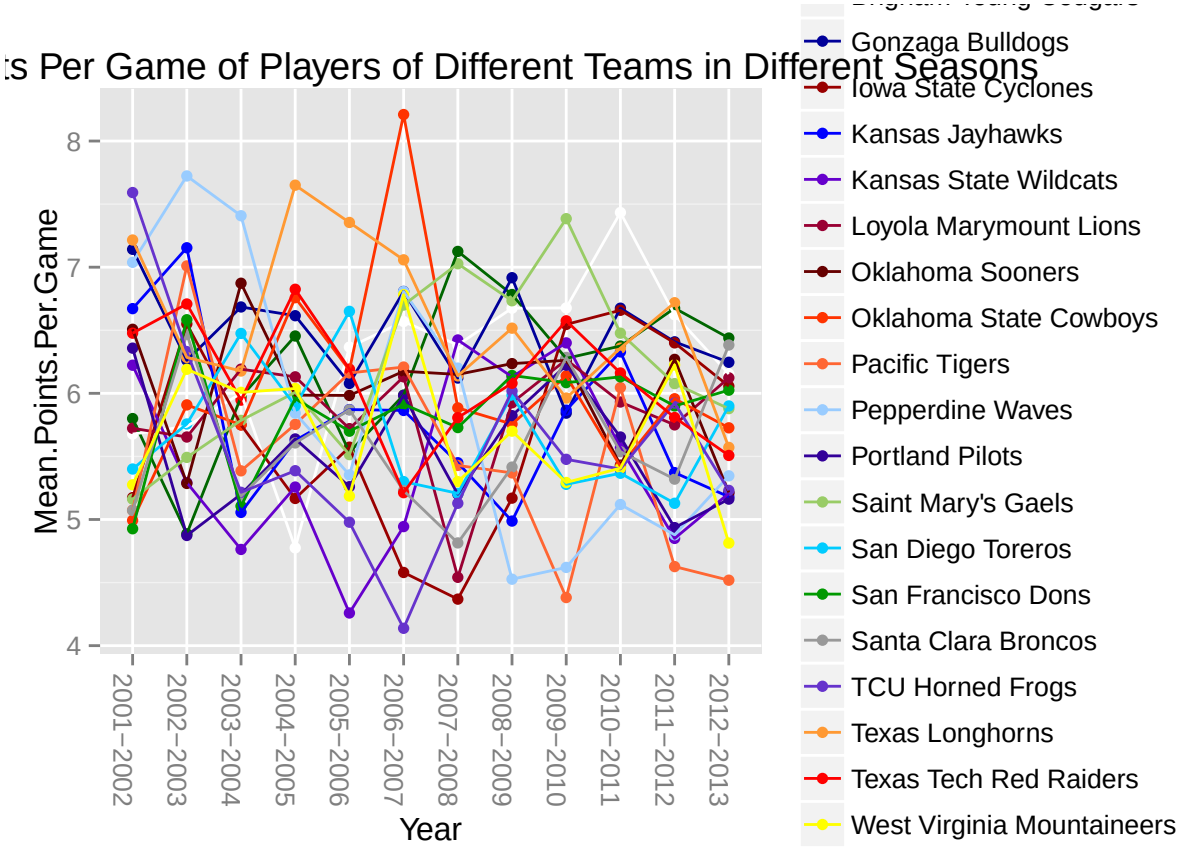
Average Points Per Game of Players by Conference in Different Seasons

```
ppgmean=Gamestatistics %>% group_by(Team,Year) %>% summarise(Mean.Points.Per.Game=mean(Points.Per.Game)

teampalette <- c("#006600","#FFFFFF","#000099","#990000","#0000FF","#6600CC","#990033","#660000","#FF33

levels(Gamestatistics$Team)
```

```
##  [1] "Baylor Bears"                "Brigham Young Cougars"
##  [3] "Gonzaga Bulldogs"            "Iowa State Cyclones"
##  [5] "Kansas Jayhawks"             "Kansas State Wildcats"
##  [7] "Loyola Marymount Lions"      "Oklahoma Sooners"
```

```
##  [9] "Oklahoma State Cowboys"     "Pacific Tigers"
## [11] "Pepperdine Waves"           "Portland Pilots"
## [13] "Saint Mary's Gaels"         "San Diego Toreros"
## [15] "San Francisco Dons"         "Santa Clara Broncos"
## [17] "TCU Horned Frogs"           "Texas Longhorns"
## [19] "Texas Tech Red Raiders"     "West Virginia Mountaineers"
```

```
#Plot
ggplot(ppgmean,aes(x=Year,y=Mean.Points.Per.Game,,color=Team,group=Team))+
  geom_point()+geom_line()+
  theme(axis.text.x = element_text(angle=-90))+ggtitle("Mean Points Per Game of Players of Different Tea
```



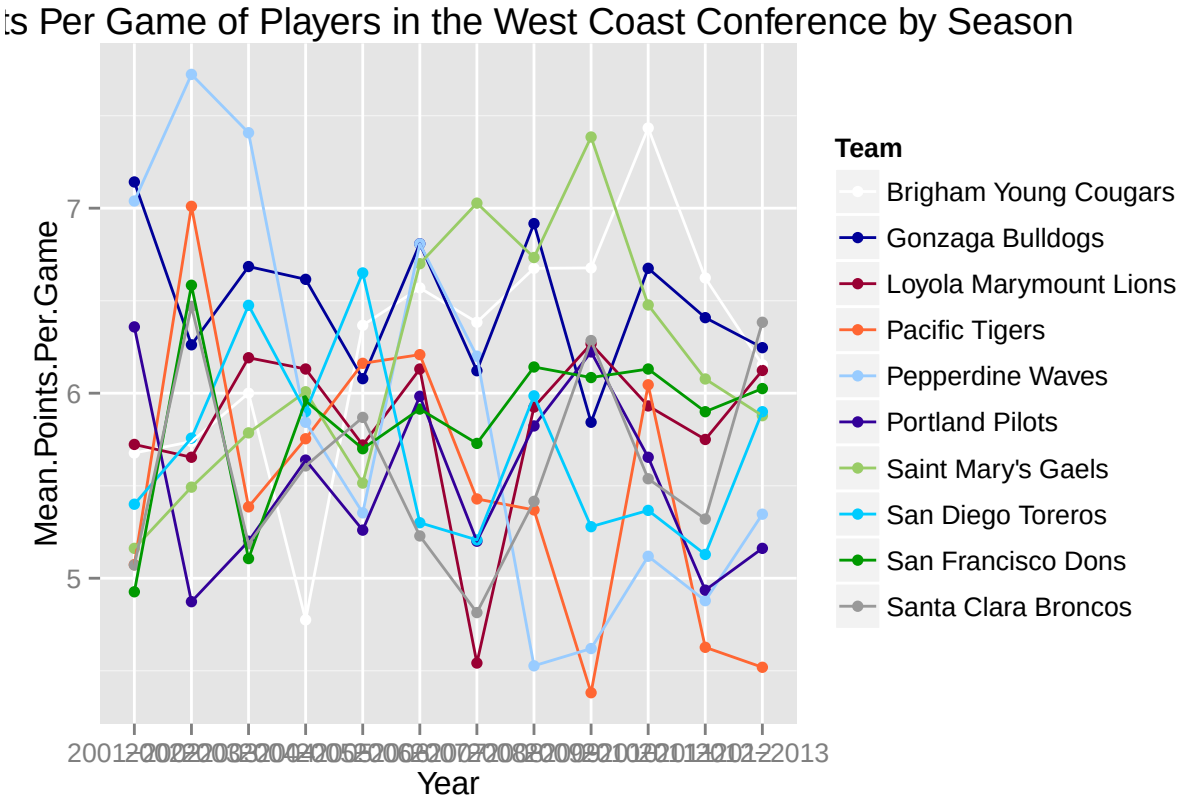
Average Points Per Game of Players by WCC Teams in Different Seasons

```
ppgmeanConf=Gamestatistics %>% group_by(Team,Year) %>% summarise(Mean.Points.Per.Game=mean(Points.Per.Ga

teampaletteWCC <- c("#FFFFFF","#000099","#990033","#FF6633","#99CCFF","#330099","#99CC66","#00CCFF","#0

levels(Gamestatistics$Team)
```

```
##  [1] "Baylor Bears"               "Brigham Young Cougars"
##  [3] "Gonzaga Bulldogs"           "Iowa State Cyclones"
##  [5] "Kansas Jayhawks"            "Kansas State Wildcats"
```

```
##  [7] "Loyola Marymount Lions"     "Oklahoma Sooners"
##  [9] "Oklahoma State Cowboys"     "Pacific Tigers"
## [11] "Pepperdine Waves"           "Portland Pilots"
## [13] "Saint Mary's Gaels"         "San Diego Toreros"
## [15] "San Francisco Dons"         "Santa Clara Broncos"
## [17] "TCU Horned Frogs"           "Texas Longhorns"
## [19] "Texas Tech Red Raiders"     "West Virginia Mountaineers"
```

```
ggplot(subset(ppgmeanConf,Team %in% c("Gonzaga Bulldogs","Brigham Young Cougars","Loyola Marymount Lions
```



Average Points Per Game of Players by Big 12 Teams in Different Seasons

```
ppgmeanConf=Gamestatistics %>% group_by(Team,Year) %>% summarise(Mean.Points.Per.Game=mean(Points.Per.Ga

teampaletteB12 <- c("#006600","#990000","#0000FF","#6600CC","#660000","#FF3300","#6633CC","#FF9933","#FF

levels(Gamestatistics$Team)
```

```
##  [1] "Baylor Bears"               "Brigham Young Cougars"
##  [3] "Gonzaga Bulldogs"           "Iowa State Cyclones"
##  [5] "Kansas Jayhawks"            "Kansas State Wildcats"
##  [7] "Loyola Marymount Lions"     "Oklahoma Sooners"
##  [9] "Oklahoma State Cowboys"     "Pacific Tigers"
```

```
## [11] "Pepperdine Waves"          "Portland Pilots"
## [13] "Saint Mary's Gaels"        "San Diego Toreros"
## [15] "San Francisco Dons"        "Santa Clara Broncos"
## [17] "TCU Horned Frogs"          "Texas Longhorns"
## [19] "Texas Tech Red Raiders"    "West Virginia Mountaineers"
```

```
ggplot(subset(ppgmeanConf,Team %in% c("Baylor Bears","Kansas Jayhawks","Kansas State Wildcats","Oklahoma
```