

The leaflet.extras Package

INTERACTIVE MAPS WITH LEAFLET IN R



Rich Majerus

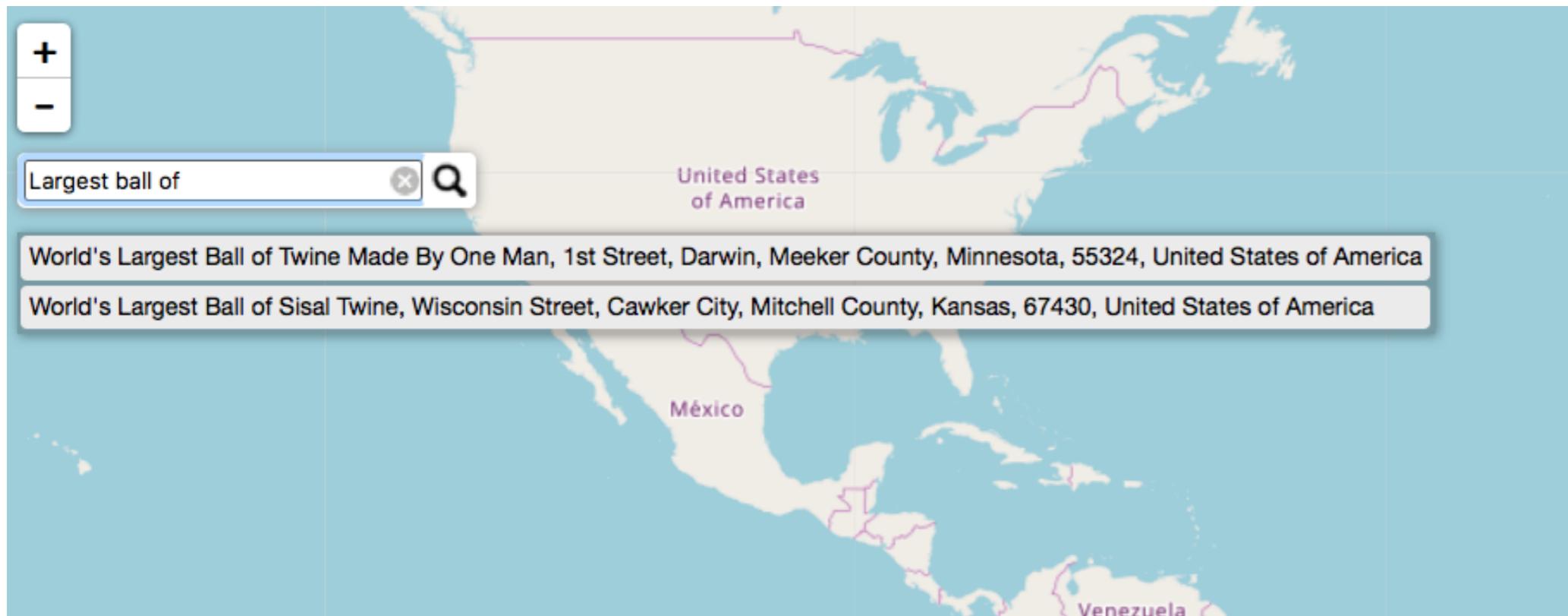
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The leaflet.extras Package

- We will focus on three extras:
 - `addSearchOSM()` - make map searchable
 - `addReverseSearchOSM()` - geocode with a mouse click
 - `addResetMapButton()` - reset map view

addSearchOSM()

```
leaflet() %>%  
  addTiles() %>%  
  addSearchOSM()
```



Find the Twine

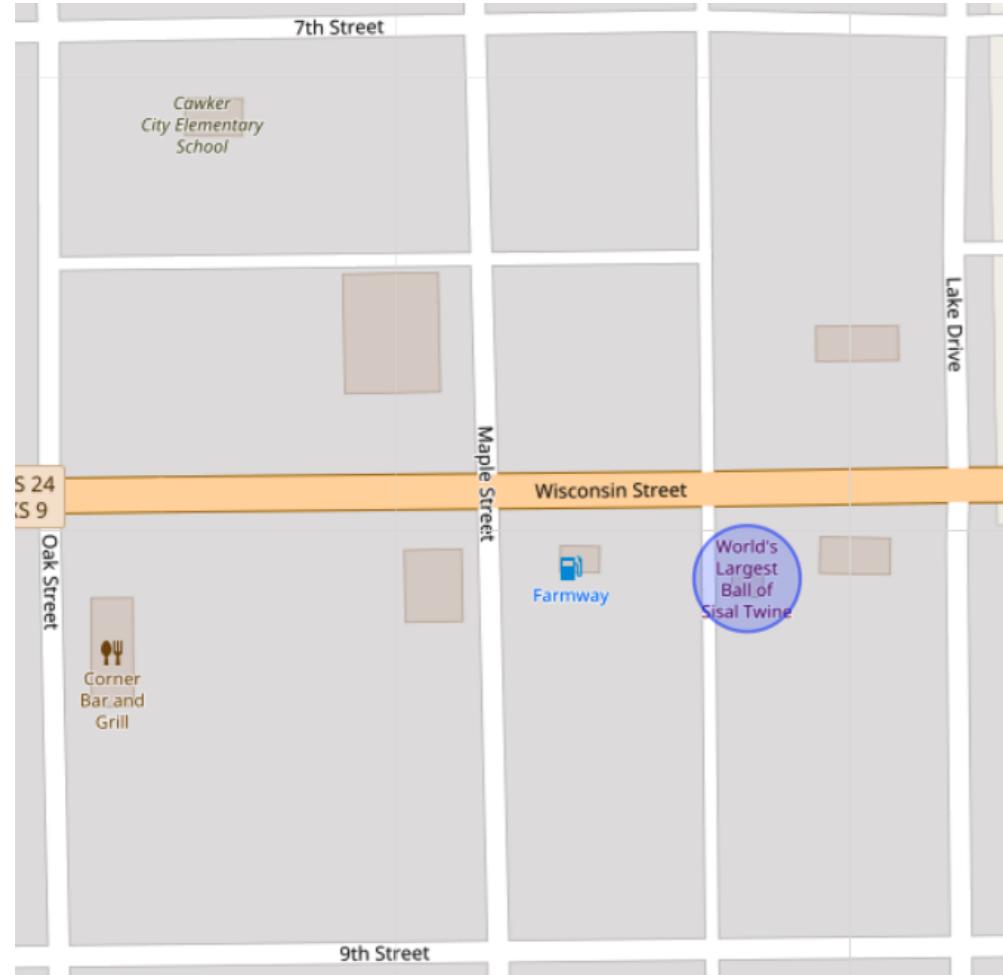
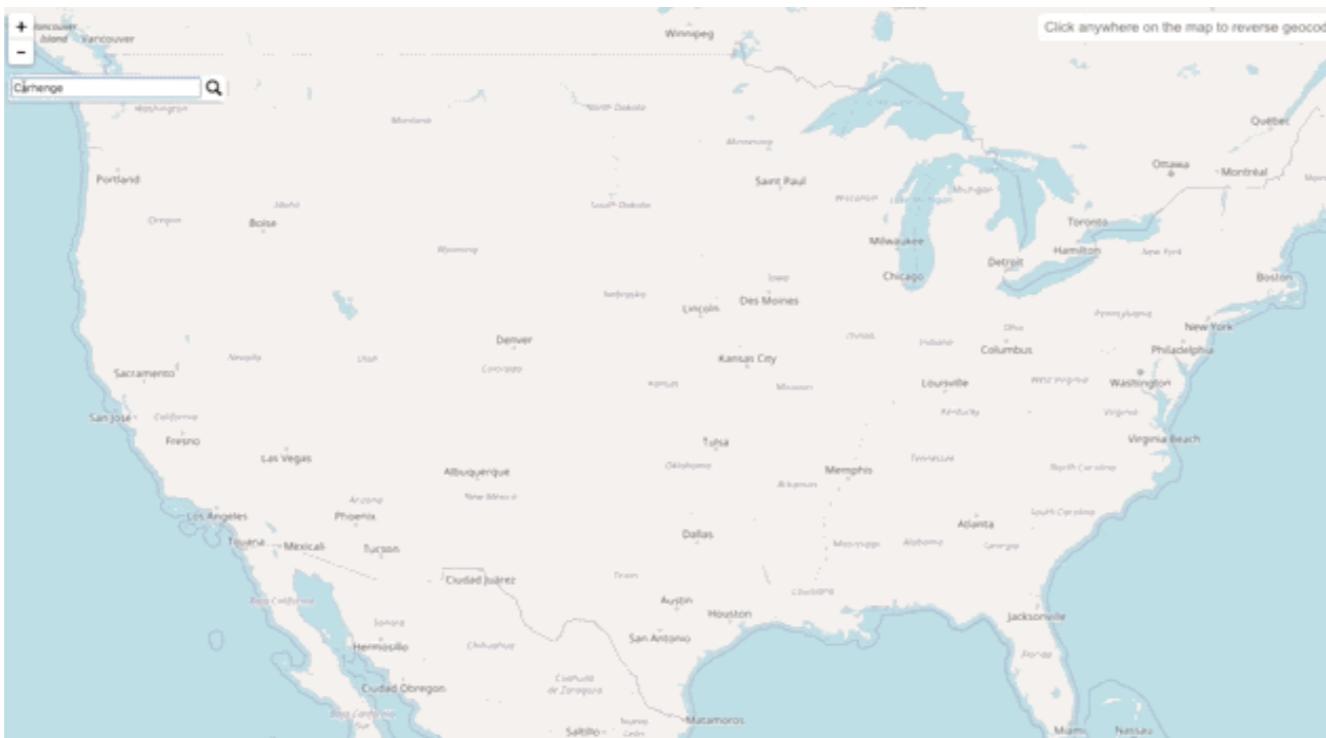


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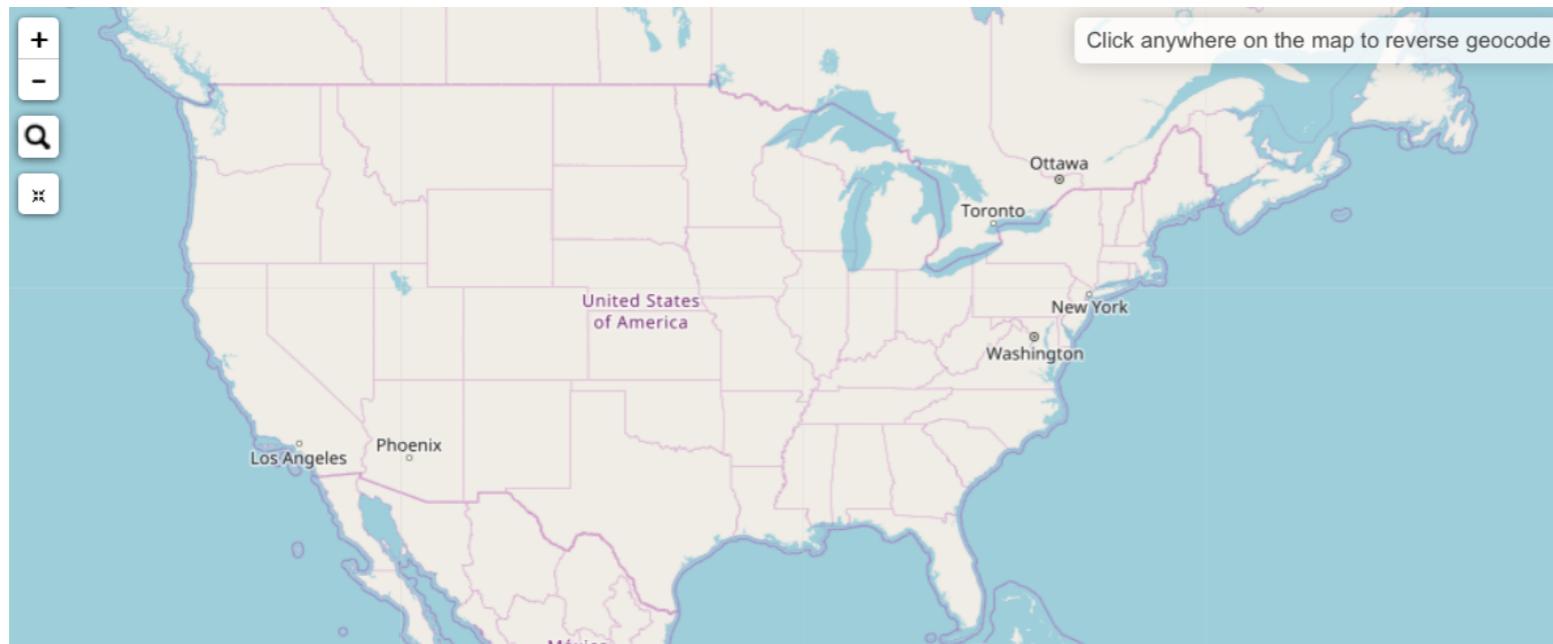
addReverseSearchOSM()

```
leaflet() %>%  
  addTiles() %>%  
  addSearchOSM() %>%  
  addReverseSearchOSM()
```



addResetMapButton()

```
leaflet() %>%  
  addTiles() %>%  
  addSearchOSM() %>%  
  addReverseSearchOSM() %>%  
  addResetMapButton()
```



Let's practice!

INTERACTIVE MAPS WITH LEAFLET IN R

Overlay Groups

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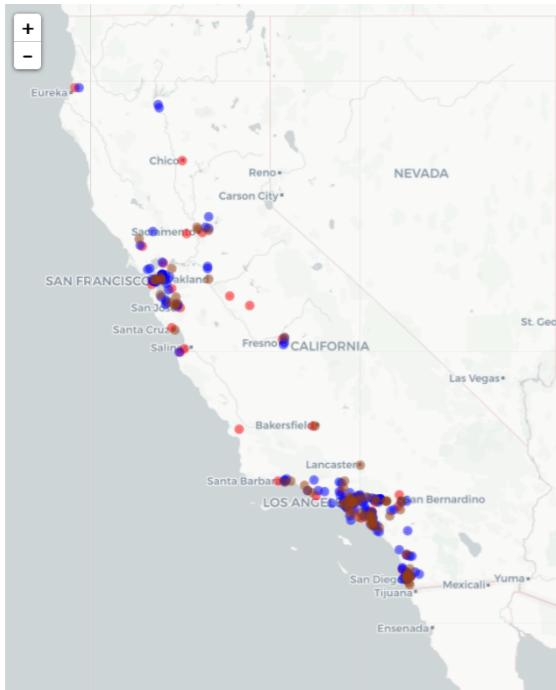


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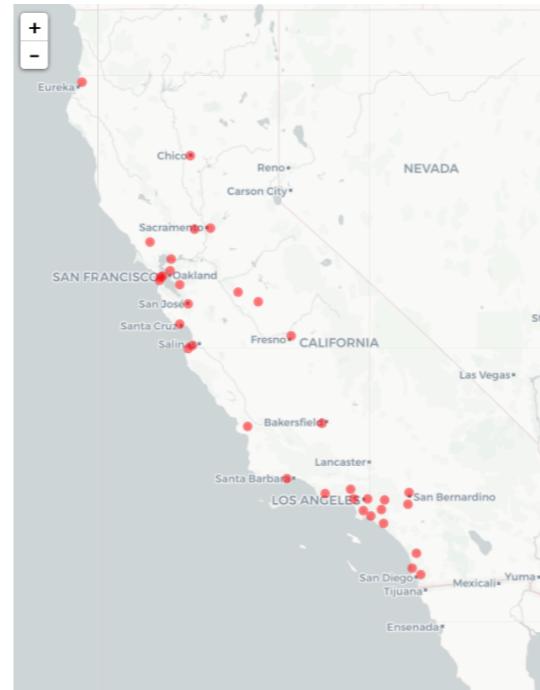
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Grouping Colleges by Sector

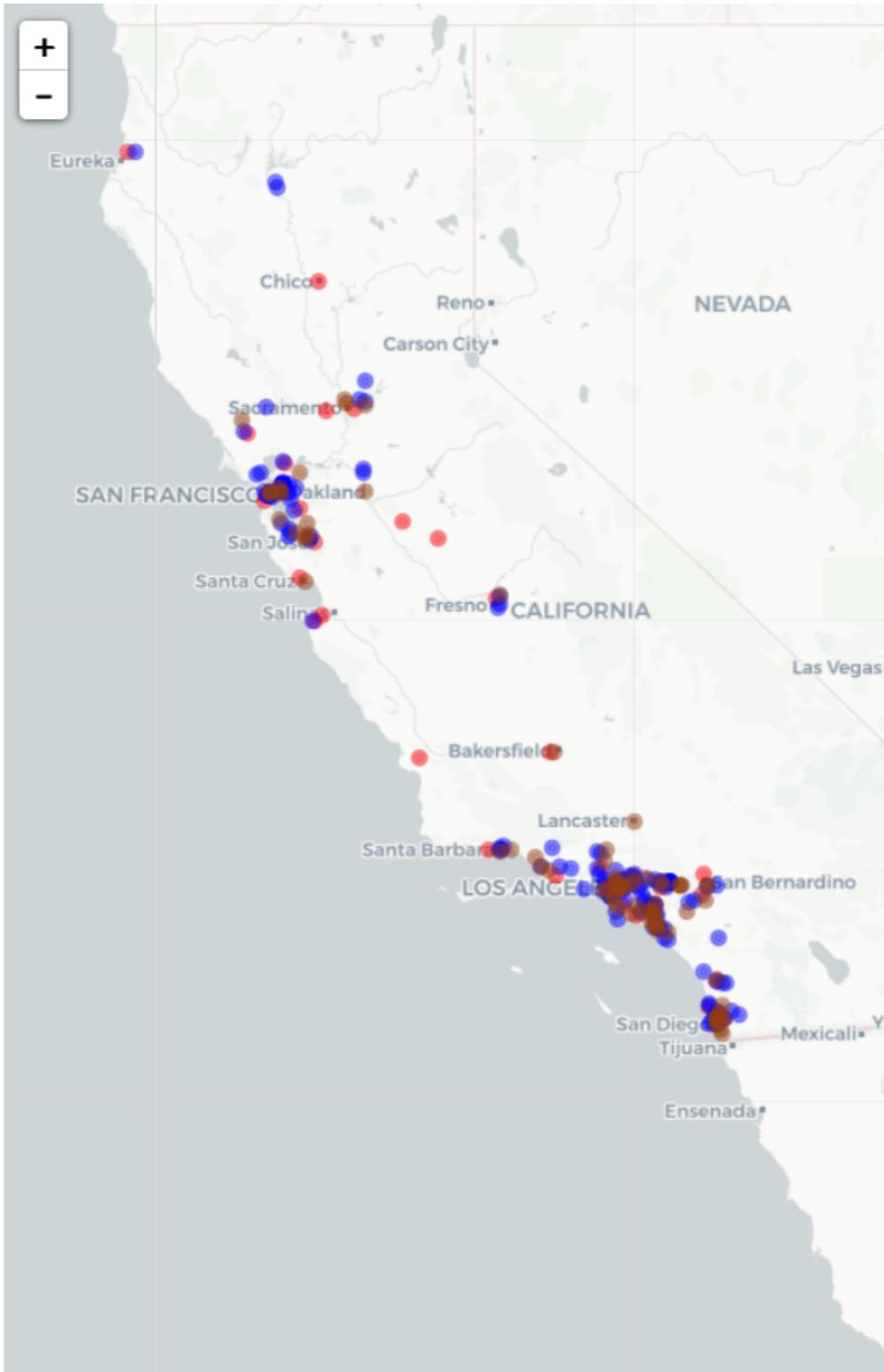
```
m <- ca_colleges %>%
  leaflet() %>%
  addProviderTiles("CartoDB")
m %>%
  addCircleMarkers(
    radius = 2,
    label = ~name)
```



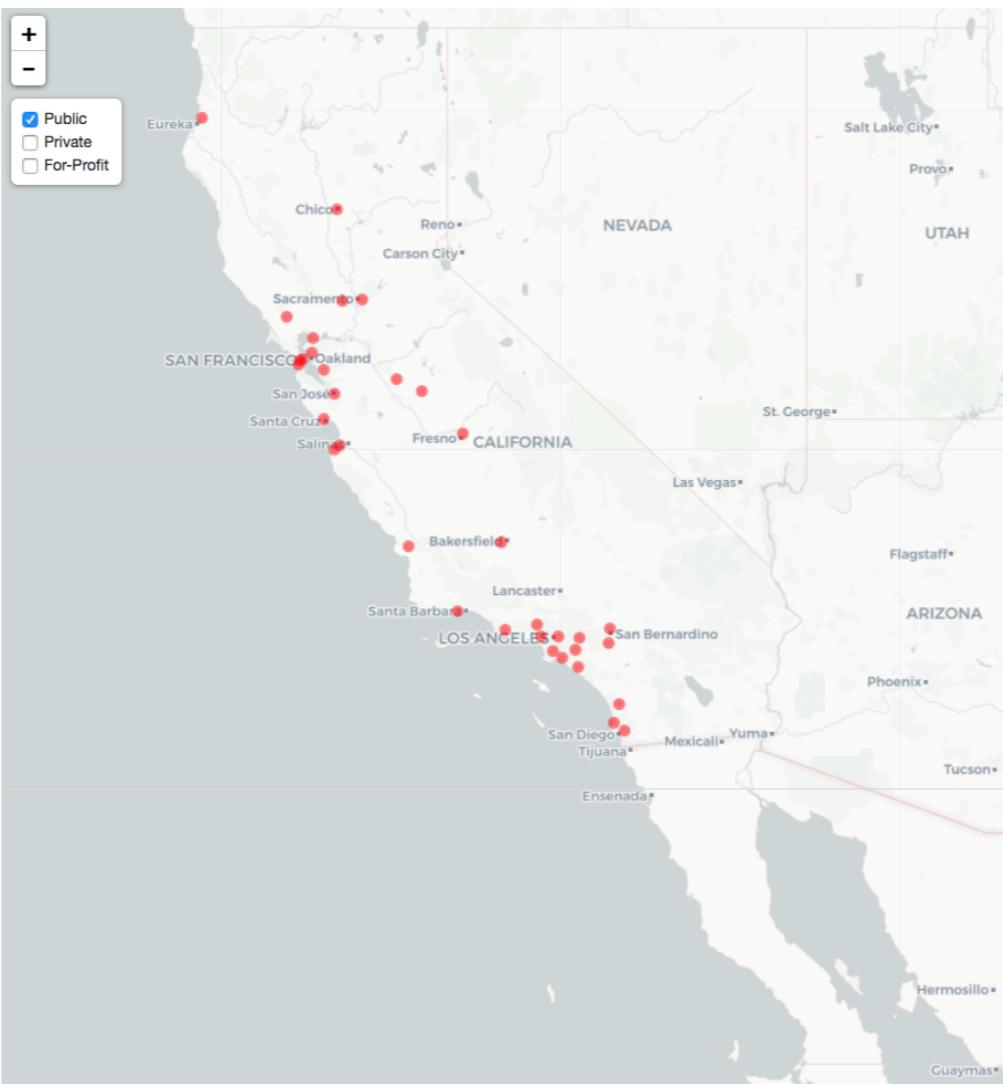
```
ca_public <- ipeds %>%
  filter(sector == "Public",
        state == "CA")
m %>%
  addCircleMarkers(
    data = ca_public,
    group = "Public")
```



```
m %>%  
  addCircleMarkers(  
    data = ca_public,  
    color = ~pal(sector_label),  
    group = "Public") %>%  
  
  addCircleMarkers(  
    data = ca_private,  
    color = ~pal(sector_label),  
    group = "Private") %>%  
  
  addCircleMarkers(  
    data = ca_profit,  
    color = ~pal(sector_label),  
    group = "For-Profit")
```



```
m %>%  
  addCircleMarkers(  
    data = ca_public,  
    color = ~pal(sector_label),  
    group = "Public") %>%  
  addCircleMarkers(  
    data = ca_private,  
    color = ~pal(sector_label),  
    group = "Private") %>%  
  addCircleMarkers(  
    data = ca_profit,  
    color = ~pal(sector_label),  
    group = "For-Profit") %>%  
  addLayersControl(  
    overlayGroups = c("Public",  
                      "Private",  
                      "For-Profit"))
```



What We are Working Toward



Let's practice!

INTERACTIVE MAPS WITH LEAFLET IN R

Base Groups

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Rich Majerus

Vice President of Strategy & Planning,
Queens University of Charlotte

Base Groups and Multiple Map Tiles

```
leaflet() %>%  
  addTiles(group = "OSM") %>%  
  addProviderTiles("CartoDB", group = "Carto") %>%  
  addProviderTiles("Esri", group = "Esri")
```



```
leaflet() %>%  
  addTiles(group = "OSM") %>%  
  addProviderTiles("CartoDB", group = "Carto") %>%  
  addProviderTiles("Esri", group = "Esri") %>%  
  addLayersControl(baseGroups = c("OSM", "Carto", "Esri"),  
                  position = "topleft")
```



Exploring Esri Base Maps



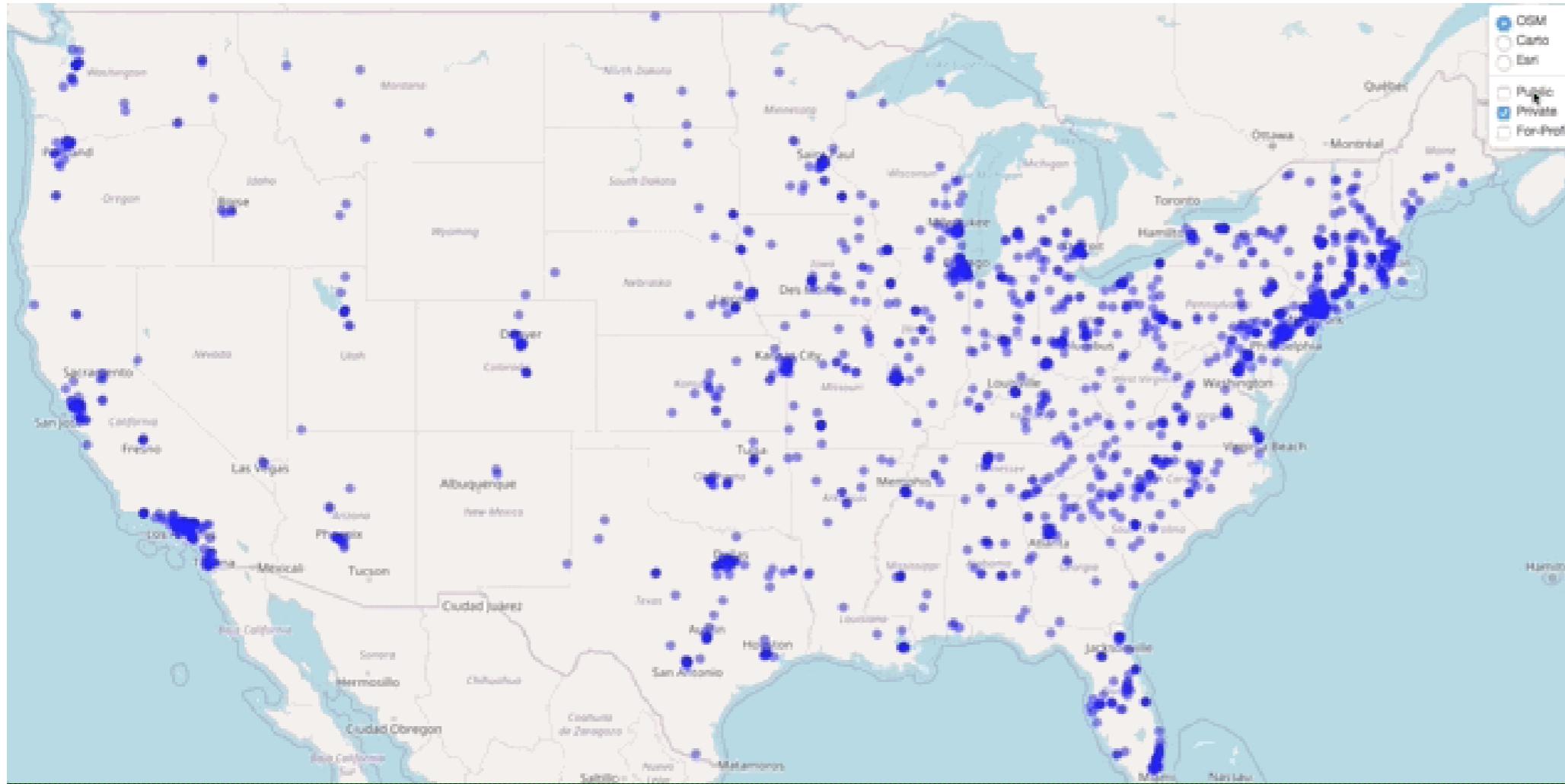
Overlay and Base Groups

```
# initialize leaflet map
leaflet() %>%
# add basemaps with groups
addTiles(group = "OSM") %>%
addProviderTiles("CartoDB", group = "Carto") %>%
addProviderTiles("Esri", group = "Esri") %>%
```

Overlay and Base Groups

```
# add marker layer for each sector with corresponding group name
addCircleMarkers(data = public, radius = 2,
                  label = ~htmlEscape(name),
                  color = ~pal(sector_label), group = "Public") %>%
addCircleMarkers(data = private, radius = 2,
                  label = ~htmlEscape(name),
                  color = ~pal(sector_label), group = "Private") %>%
addCircleMarkers(data = profit, radius = 2,
                  label = ~htmlEscape(name),
                  color = ~pal(sector_label), group = "For-Profit") %>%
# add layer controls for base and overlay groups
addLayersControl(baseGroups = c("OSM", "Carto", "Esri"),
                 overlayGroups = c("Public", "Private",
                                  "For-Profit"))
```

The Big Reveal



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Pieces of Flair

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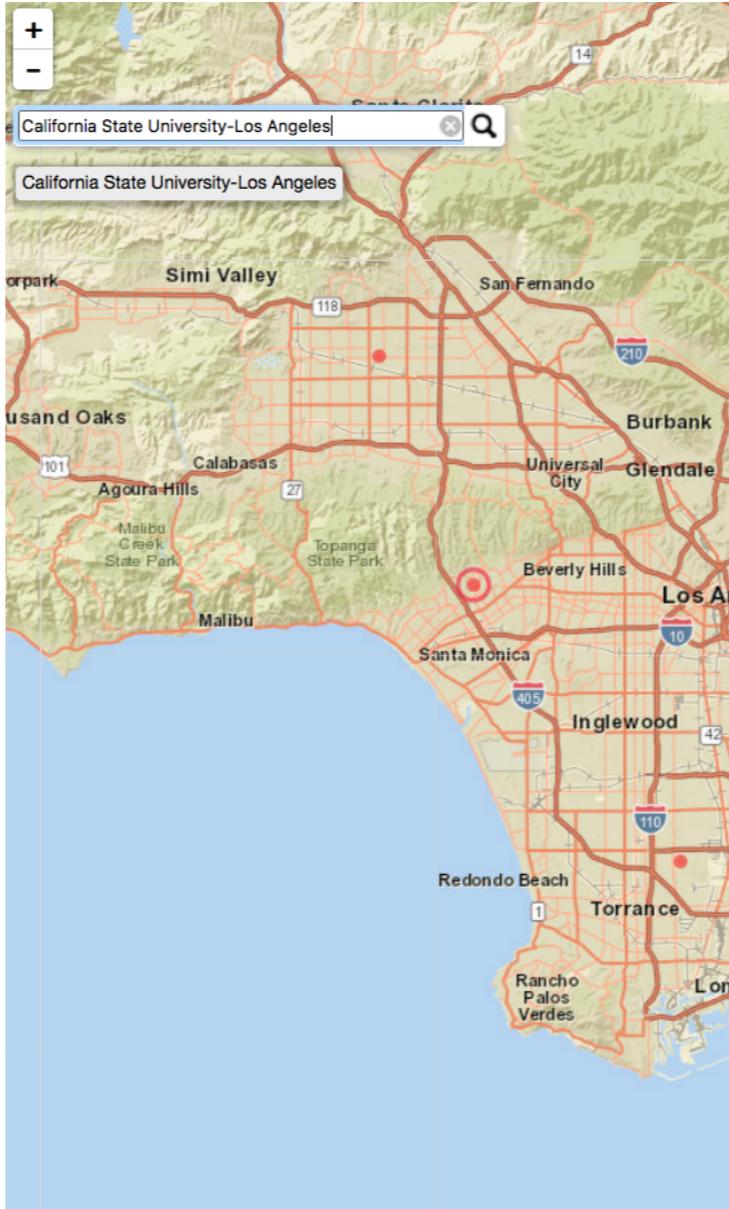
The College Search

```
ca_public <- ipeds %>%
  filter(sector_label == "Public", state == "CA")
ca_public  %>%
  leaflet() %>%
  addProviderTiles("Esri") %>%
  addCircleMarkers(radius = 2,
    label = ~htmlEscape(name),
    color = ~pal(sector_label),
    group = "Public") %>%
  addSearchFeatures(targetGroups = 'Public',
    options = searchFeaturesOptions(zoom = 10))
```

```
# search for markers  
addSearchFeatures(  
  targetGroups = 'Public')
```

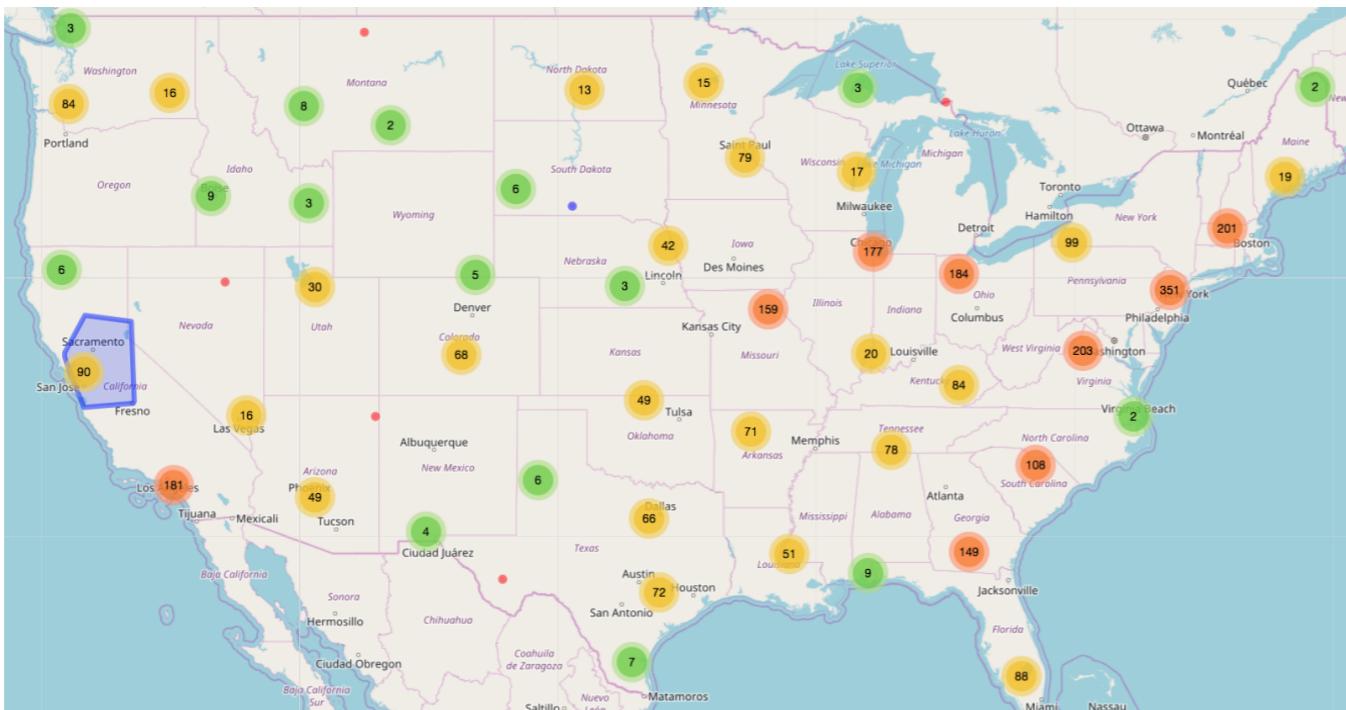


```
addSearchFeatures(options =  
  searchFeaturesOptions(zoom = 10),  
  targetGroups = 'Public')
```



Clustering Colleges

```
ipeds %>%  
  leaflet() %>%  
    addTiles() %>%  
    addCircleMarkers(radius = 2,  
                     color = ~pal(sector_label),  
                     clusterOptions = markerClusterOptions())
```



Clustering Colleges



Let's practice!

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