lab02\_key

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library(tidyverse)

## ── Attaching packages ──────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────── tidyverse 1.2.1 ──

## ✔ ggplot2 3.1.1 ✔ purrr 0.3.2   
## ✔ tibble 2.1.3 ✔ dplyr 0.8.3   
## ✔ tidyr 0.8.3.9000 ✔ stringr 1.4.0   
## ✔ readr 1.3.1 ✔ forcats 0.4.0

## ── Conflicts ─────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()

library(sf)

## Linking to GEOS 3.6.2, GDAL 2.2.3, PROJ 4.9.3

knox <- st\_read('knox\_acs.shp')

## Reading layer `knox\_acs' from data source `/home/nnagle/Dropbox/classes/Geog415/geog415\_f19/labs/lab02\_rmarkdown/knox\_acs.shp' using driver `ESRI Shapefile'  
## Simple feature collection with 112 features and 6 fields  
## geometry type: POLYGON  
## dimension: XY  
## bbox: xmin: -84.27347 ymin: 35.79381 xmax: -83.65092 ymax: 36.18648  
## epsg (SRID): 4269  
## proj4string: +proj=longlat +datum=NAD83 +no\_defs

knox <- knox %>%  
 mutate(college\_frac = AGE18\_21 / TOTAL\_POP)

ggplot(knox) + geom\_sf(aes(fill=college\_frac))



summary\_stat <- knox %>% st\_set\_geometry(NULL) %>%   
 summarize(mn\_inc = mean(MEDHHINC, na.rm=TRUE),  
 cor = cor(MEDHHINC, MEDHVALUE,use='complete.obs'))   
summary\_stat

## mn\_inc cor  
## 1 56057.96 0.8389087

0.8389087

ggplot(knox, aes(x=MEDHHINC/1000,y=MEDHVALUE/1000, alpha=TOTAL\_POP)) + geom\_point() +  
 labs(x='Median HH Income ($1000s)', y='Median House Value ($1000s)', alpha='Population')

## Warning: Removed 2 rows containing missing values (geom\_point).

![](data:application/pdf;base64,)