racial_isolation_index

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Calculating Segregation

First we need to load some libraries. We use R to get all of our census data from the American Community Survey.

Below, we will use counties in New Jersey and use the 2015 ACS B03002 table. This table gives population estimates by race and Hispanic ethnicity.

```
## Getting data from the 2011-2015 5-year ACS
# check for available variables in the census data (in this case American Community Survey)
ACS18var <- load_variables(2018, "acs5", cache = TRUE)
view(ACS18var)

## Loading ACS5 variables for 2015 from table B03002 and caching the dataset for faster future access.
race_table <-  get_acs(geography = "tract", year=2015, geometry = F, output="wide", table = "B03002", ca
```

```
## Getting data from the 2011-2015 5-year ACS

## Loading ACS5 variables for 2015 from table B03002 and caching the dataset for faster future access.

## Warning: `funs()` is deprecated as of dplyr 0.8.0.
## Please use a list of either functions or lambdas:
##
##   # Simple named list:
##   list(mean = mean, median = median)
##
##   # Auto named with `tibble::lst()`:
##   tibble::lst(mean, median)
##
##   # Using lambdas
##   list(~ mean(., trim = .2), ~ median(., na.rm = TRUE))
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_warnings()` to see where this warning was generated.
```

```
trdat<-race_table%>%
  mutate(nhwhite=B03002_003E,
         nhblack=B03002_004E,
         nhasian=B03002_006E,
         nhother= B03002_005E+B03002_007E+B03002_008E+B03002_009E+B03002_010E,
         hisp=B03002_012E,
         total=B03002_001E,
         year=2015,
         cofips=substr(GEOID, 1,5))%>%
  select(GEOID, nhwhite, nhblack, nhasian, hisp, nhother, total, year, cofips )%>%
  arrange(cofips, GEOID)

#look at the first few cases
head(trdat)
```

```
## # A tibble: 6 x 9
##   GEOID       nhwhite nhblack nhasian  hisp nhother total  year cofips
##   <chr>         <dbl>   <dbl>   <dbl> <dbl>   <dbl> <dbl> <dbl> <chr>
## 1 34001000100     691     420     372   681      49  2213  2015 34001
## 2 34001000200    1554     342     733   602     137  3330  2015 34001
## 3 34001000300     711     346    1489  1693     189  4428  2015 34001
## 4 34001000400     935     310     497   988      71  2801  2015 34001
## 5 34001000500     635     142    1190  1104     133  3199  2015 34001
## 6 34001001100     107    1463      18   153      30  1771  2015 34001
```

```
## `summarise()` ungrouping output (override with `.groups` argument)
```

```
## # A tibble: 6 x 15
##   GEOID nhwhite nhblack nhasian  hisp nhother total  year cofips co_total
##   <chr>   <dbl>   <dbl>   <dbl> <dbl>   <dbl> <dbl> <dbl> <chr>     <dbl>
## 1 3400~     691     420     372   681      49  2213  2015 34001    275376
## 2 3400~    1554     342     733   602     137  3330  2015 34001    275376
## 3 3400~     711     346    1489  1693     189  4428  2015 34001    275376
## 4 3400~     935     310     497   988      71  2801  2015 34001    275376
## 5 3400~     635     142    1190  1104     133  3199  2015 34001    275376
## 6 3400~     107    1463      18   153      30  1771  2015 34001    275376
## # ... with 5 more variables: co_wht <dbl>, co_blk <dbl>, co_asian <dbl>,
## #   co_oth <dbl>, co_hisp <dbl>
```

group segregation measures in counties

```
## `summarise()` ungrouping output (override with `.groups` argument)
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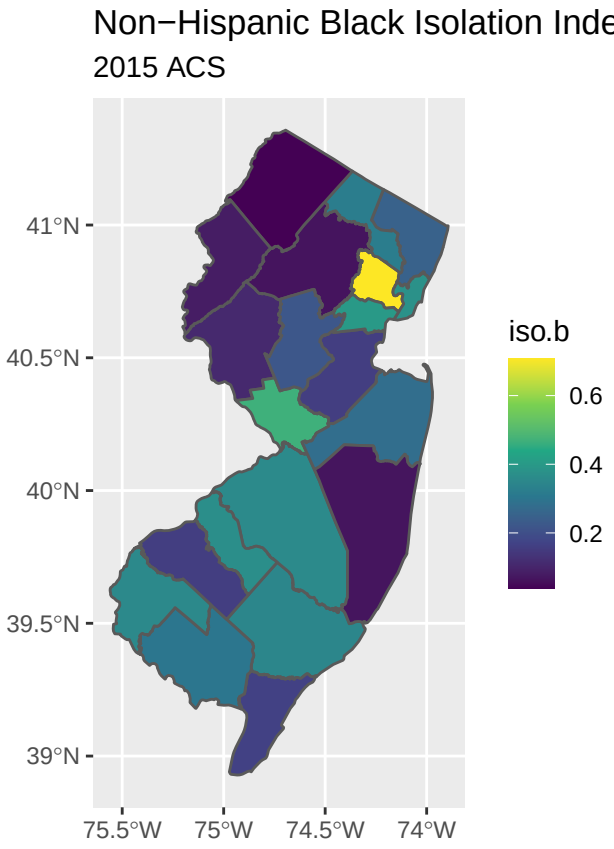
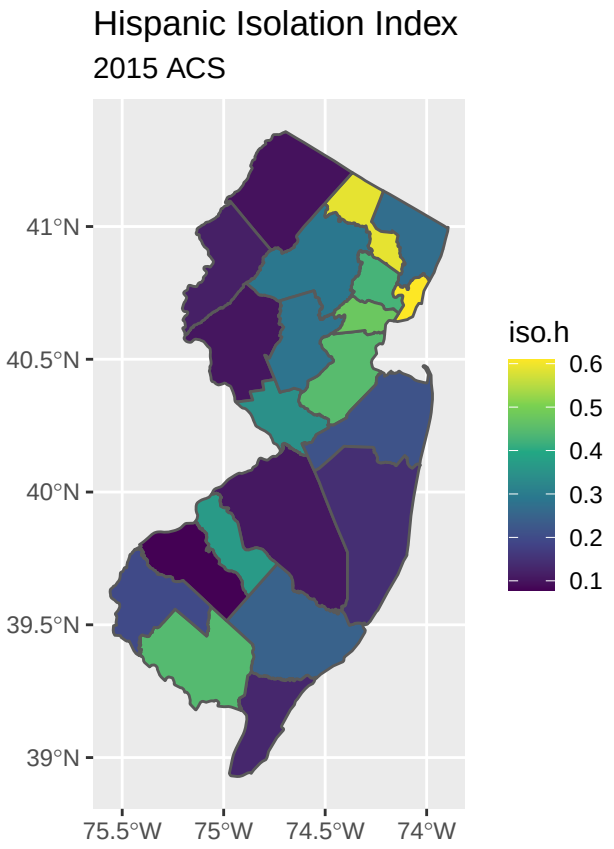
```
## Warning: ‘group_by_()‘ is deprecated as of dplyr 0.7.0.
## Please use ‘group_by()‘ instead.
## See vignette('programming') for more help
## This warning is displayed once every 8 hours.
## Call ‘lifecycle::last_warnings()‘ to see where this warning was generated.
```



Hispanic Isolation Index

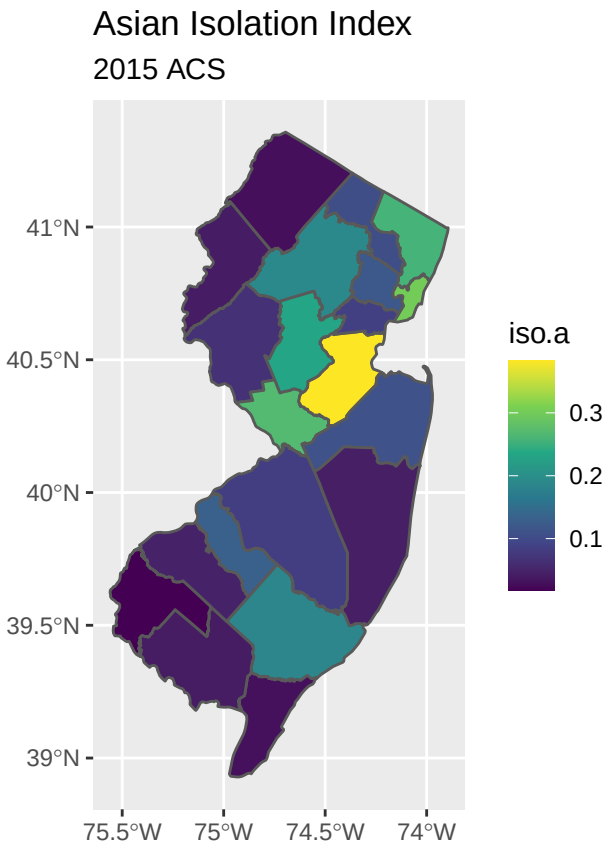
```
## ‘summarise()‘ ungrouping output (override with ‘.groups‘ argument)
```

```
## `summarise()` ungrouping output (override with `.groups` argument)
## `summarise()` ungrouping output (override with `.groups` argument)
```



Asian Isolation Index

```
## `summarise()` ungrouping output (override with `.groups` argument)
## `summarise()` ungrouping output (override with `.groups` argument)
## `summarise()` ungrouping output (override with `.groups` argument)
```


Asian Isolation Index
2015 ACS
41°N
40.5°N
40°N
39.5°N
39°N
75.5°W
75°W
74.5°W
74°W
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0.3
0.2
0.1