# site_demographics

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```
counties <- read.csv(paste0(csv.dir, "city-state-county.csv"), stringsAsFactors = FALSE)

data("county.regions")
counties <- left_join(counties, county.regions)
```

```
## Joining, by = "region"
```

```
demog <- get_county_demographics(endyear=2013, span=5)
county.demo <- left_join(counties, demog)
```

```
## Joining, by = "region"
```

```
# Recapitalize county
county.demo$County <- unlist(lapply(county.demo$County, Cap_all))
# Hack District Of columbia...TODO(ROG): Fix Cap_all()
county.demo$County[county.demo$County == "District Of columbia"] = "District of Columbia"
county.demo <- county.demo %>%
  mutate(state.cty = paste0(County, ", ", State))
```

```
# county.demo %>%
#   filter(Collecting == "Collecting") %>%
#   arrange(US.Region, Site.code, State, County) %>%
#   select(US.Region, Site.code, State, County, total_population,
#          percent_white, percent_black, percent_asian,
#          percent_hispanic, multi) ->
#   county.race.ethnicity
```

```
county.demo %>%
  select(US.Region, Site.code, State, County, state.cty, percent_black, percent_hispanic, percent_asian
  gather(key = race, value = pop.percent, percent_black:percent_white) ->
county.pop.percent

county.pop.percent$race <- recode(county.pop.percent$race,
                                  percent_black = "Black",
                                  percent_hispanic = "Hispanic",
                                  percent_asian = "Asian",
                                  percent_white = "White")

# county.pop.percent <- county.pop.percent %>%
#   mutate(state.cty = paste0(County, ", ", State))
```

```
# county.pop.percent %>%
#   ggplot() +
#   aes(y = pop.percent, x = race, fill = race,
#       color = race, group = County) +
#   geom_line(color = "black", linetype = 1, alpha = 0.2) +
#   geom_point(size = 3) +
#   ylab("Proportion of population") +
#   theme_classic() +
```

```
#   theme(legend.position = "none",
#         axis.title = element_text(size = rel(1.5), face ="bold"),
#         axis.text = element_text(size = rel(1.2)))
```

```
plot.demo.by.state.cty <- function(d, region = "East") {
  d %>%
    filter(US.Region == region) %>%
    ggplot() +
    aes(x = state.cty, y = pop.percent, fill = race) +
    geom_col() +
    coord_flip() +
    theme_classic() +
    theme(legend.position = "bottom",
        axis.title = element_text(size = rel(1.5), face ="bold"),
        axis.text = element_text(size = rel(1.2)),
        axis.text.x = element_text(),
        axis.title.x = element_blank(),
        axis.title.y = element_blank())
}
```

```
#plot.demo.by.state.cty(county.pop.percent, "East")
```

```
#plot.demo.by.state.cty(county.pop.percent, "West")
```

```
#plot.demo.by.state.cty(county.pop.percent, "South")
```

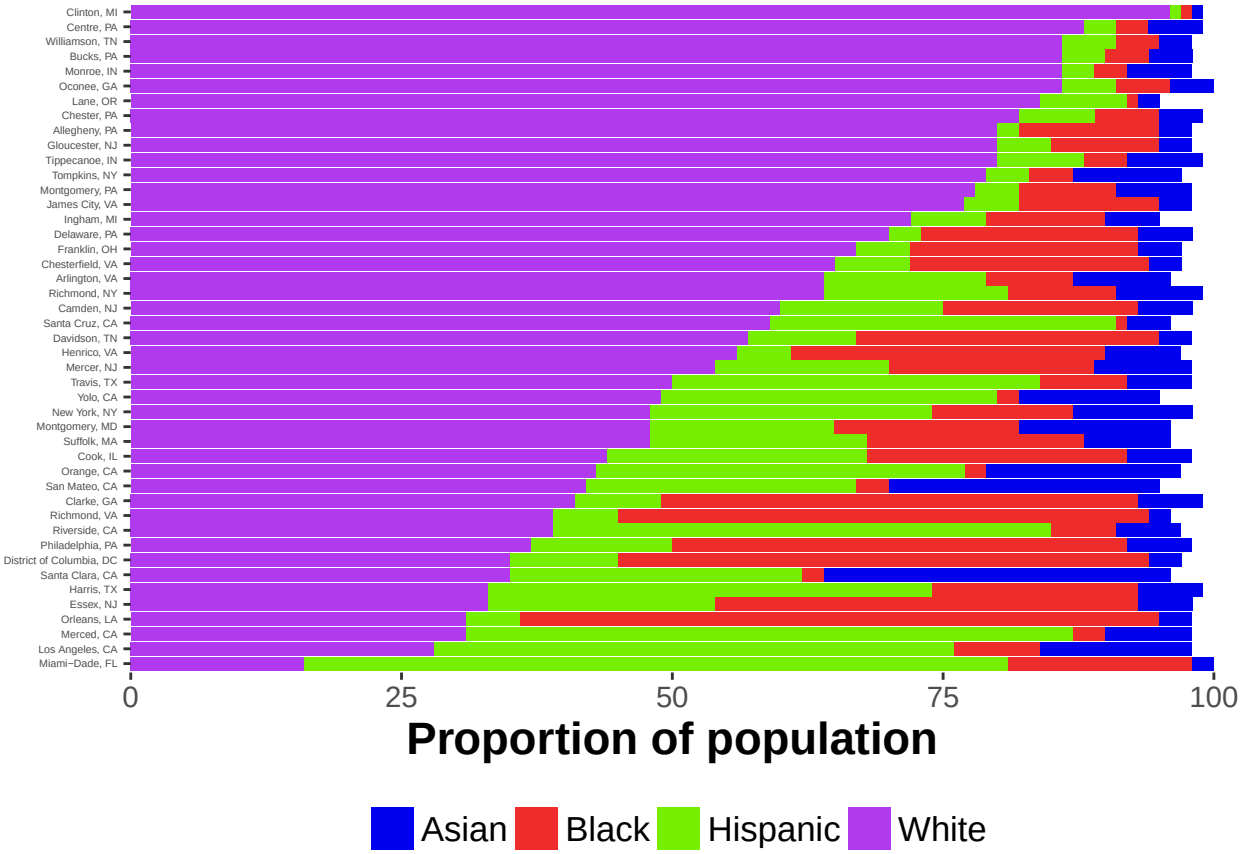
```
#plot.demo.by.state.cty(county.pop.percent, "Midwest")
```

```
county.demo %>%
  mutate(p.white = percent_white) %>%
  select(State, County, p.white) ->
  p.white.sortlist

play.palette <- scale_fill_manual(values=c("blue2", "firebrick2", "chartreuse2", "darkorchid2"))

play.theme <-
  theme_classic() +
  theme(legend.position = "bottom",
        legend.title = element_blank(),
        legend.text = element_text(size = rel(1.2)),
        axis.title = element_text(size = rel(1.5), face ="bold"),
        axis.text.x = element_text(size = rel(1.2)),
        axis.text.y = element_text(size = rel(.5)),
        axis.line = element_blank(),
        axis.title.y = element_blank(),
        plot.margin=unit(c(0,.5,0,0),"cm"))

left_join(county.pop.percent, p.white.sortlist) %>%
  arrange(p.white) %>%
  mutate(state.cty = factor(state.cty, unique(state.cty))) %>%
  ggplot() +
  aes(x = state.cty, y = pop.percent, fill = race) +
  geom_col() +
  scale_fill_discrete(limits=c("Asian", "Black", "Hispanic", "White")) +
  play.palette +
```

```
  play.theme +
  coord_flip() +
  scale_y_continuous(expand=c(0,0)) +
  ylab("Proportion of population")
```

```
## Joining, by = c("State", "County")
```

```
## Scale for 'fill' is already present. Adding another scale for 'fill',
## which will replace the existing scale.
```




```
county.pop.percent %>%
  group_by(Site.code, State, County) %>%
  summarize(tot.p = sum(pop.percent))
```

```
## # A tibble: 45 x 4
## # Groups:   Site.code, State [?]
##    Site.code State County       tot.p
##    <chr>     <chr> <chr>        <dbl>
##  1 BU        MA    Suffolk        96.
##  2 CHI       IL    Cook           98.
##  3 CHOP      NJ    Camden         98.
##  4 CHOP      NJ    Gloucester     98.
##  5 CHOP      PA    Bucks          98.
##  6 CHOP      PA    Chester        99.
##  7 CHOP      PA    Delaware       98.
##  8 CHOP      PA    Montgomery     98.
##  9 CHOP      PA    Philadelphia   98.
## 10 COR       NY    Tompkins       97.
```

```
## # ... with 35 more rows
```

```
county.demo %>%
  arrange(per_capita_income) %>%
  mutate(state.cty = factor(state.cty, unique(state.cty))) %>%
  ggplot() +
  aes(x = state.cty, y = per_capita_income, fill = US.Region) +
  geom_col() +
  coord_flip() +
  play.theme +
  play.palette +
  scale_y_continuous(expand=c(0,0)) +
  ylab("Median per capita income by site")
```