RideShare in Austin

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R Markdown

```
df<-read_csv('atx_dwi_pi.csv')
```

```
## Parsed with column specification:
## cols(
##   .default = col_character(),
##   `Incident Number` = col_double(),
##   `Highest Offense Code` = col_double(),
##   `Occurred Time` = col_double(),
##   `Report Time` = col_double(),
##   `Zip Code` = col_double(),
##   `Council District` = col_double(),
##   PRA = col_double(),
##   `Census Tract` = col_double(),
##   `UCR Category` = col_logical(),
##   `Category Description` = col_logical(),
##   `X-coordinate` = col_double(),
##   `Y-coordinate` = col_double(),
##   Latitude = col_double(),
##   Longitude = col_double()
## )
```

```
## See spec(...) for full column specifications.
```

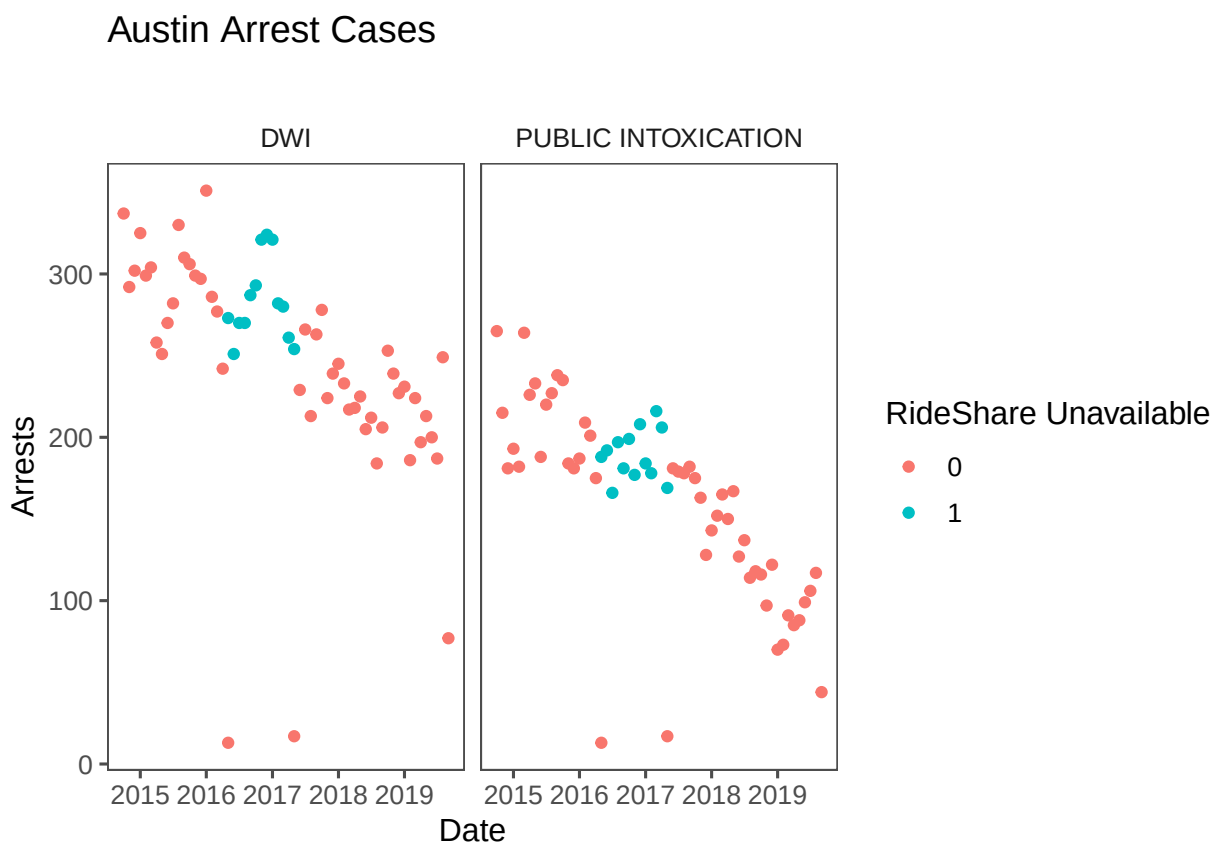
```
#df%>%glimpse()
```

What does data look like

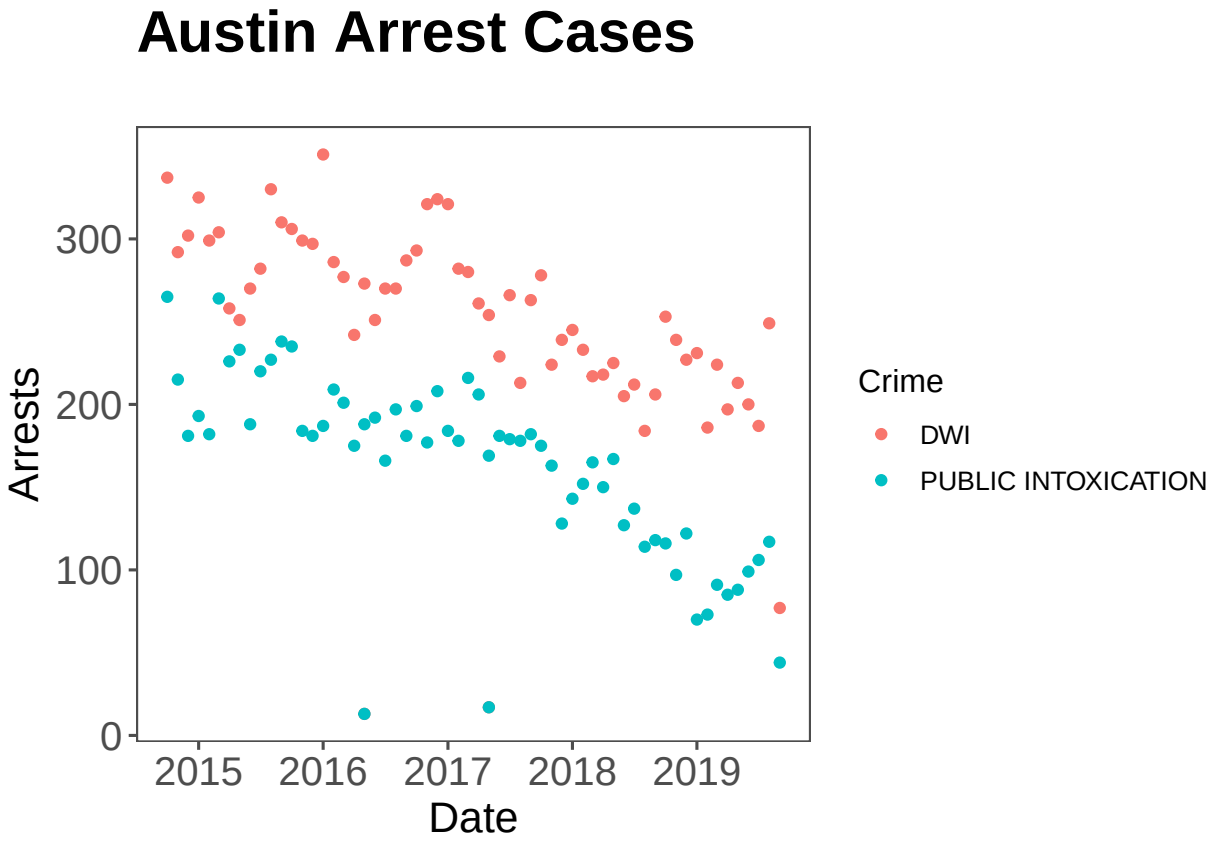
Okay, data looks messy. I'm going to group by month

```
mly_dat<-df%>%
  rename(crime_type=`Highest Offense Description`,
         occ_datetime=`Occurred Date Time`)%>%
  mutate(datetime=mdy_hms(occ_datetime))%>%
  mutate(date=date(datetime))%>%
  filter(date>'2014-10-01')%>%
  filter(crime_type%in%c('DWI','PUBLIC INTOXICATION'))%>%
  mutate(fdate=floor_date(date,unit='month'))%>%
  mutate(rs = case_when(date>='2017-05-29'~0,
                        date<='2016-05-01'~0,
                        TRUE ~ 1))%>%
  mutate(rs=as.factor(rs))%>%
  group_by(crime_type,fdate,rs)%>%summarise(events=n())%>%select(fdate,crime_type,rs,events)%>%ungroup()
  mutate(tl = 1:n())

mly_dat%>%
  ggplot(aes(x=fdate,y=events,color=rs))+geom_point()+facet_wrap(~crime_type)+
  labs(x='Date',y='Arrests',title='Austin Arrest Cases',color='RideShare Unavailable',subtitle = '')+
  theme_few()
```




```
mly_dat%>%
  ggplot(aes(x=fdate,y=events,color=crime_type))+geom_point()+
  theme_few()+
  #scale_colour_brewer(palette = "Dark2")+
  labs(x='Date',y='Arrests',title='Austin Arrest Cases',color='Crime',subtitle = '')+
  theme(plot.background = element_rect(fill = "white"),
        panel.background = element_rect(fill = 'white'),
        plot.title=element_text(family="sans", face="bold",size=22),
        axis.text=element_text(size=15),
        axis.title.x = element_text(size = 16),
        axis.title.y = element_text(size = 16),
        strip.text.x = element_text(size = 16, colour = "orange"),
        plot.caption=element_text(family="sans", face="bold",size=20))+scale_fill_hc()
```




```
data<-mly_dat%>%filter(fdate<='2017-06-01')%>%
  mutate(crime_type = factor(crime_type,levels = c("PUBLIC INTOXICATION","DWI")))%>%
  mutate(D = ifelse(crime_type=='DWI',1,0))

dd<-lm(formula=events ~ D + rs + rs*D, data=data)
summary(dd)
```

```
##
## Call:
## lm(formula = events ~ D + rs + rs * D, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -254.136  -10.609    5.538   33.773   83.864
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  191.591     13.200  14.514  < 2e-16 ***
## D             75.545     18.668   4.047 0.000139 ***
## rs1           -2.283     21.659  -0.105 0.916365
## D:rs1         18.762     30.630   0.613 0.542287
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 61.91 on 66 degrees of freedom
## Multiple R-squared:  0.3243, Adjusted R-squared:  0.2936
## F-statistic: 10.56 on 3 and 66 DF,  p-value: 9.272e-06
```

It doesn't look like RideShare had an effect on DWI charges. Good job Austin!