# Lecture 22

# Last time

Survey data from 77 college students on a dry campus (i.e., alcohol is prohibited) in the US. Survey asks students "How many alcoholic drinks did you consume last weekend?"

- `drinks`: number of drinks the student reports consuming
- `sex`: whether the student identifies as male
- `OffCampus`: whether the student lives off campus
- `FirstYear`: whether the student is a first-year student

**Question:** Why might students report `0` drinks?

# Paper de-brief

How did Lambert (1992) address the problem of excess 0s?

# Zero-inflated Poisson (ZIP) model

# In R

```r
library(pscl)

m1 <- zeroinfl(drinks ~ sex + FirstYear + OffCampus,
               dist = "poisson",
               data = wdrinks)

m1$coefficients
```

```
$count
  (Intercept)          sexm FirstYearTRUE OffCampusTRUE
    0.8010438     0.9834689    -0.1619318     0.3723519

$zero
  (Intercept)          sexm FirstYearTRUE OffCampusTRUE
   -0.3961839    -0.0707907     0.8919687    -1.6913744
```

# Paper de-brief

How did Lamber (1992) propose fitting the ZIP model?

# Fitting ZIP models

# Class activity

https://sta712-f23.github.io/class_activities/ca_lecture_22.html