Motivating Example for Confidence Intervals

Example: Body Temperatures

- It's generally believed that the average body temperature is 98.6 degrees Farenheit (37 degrees Celsius).
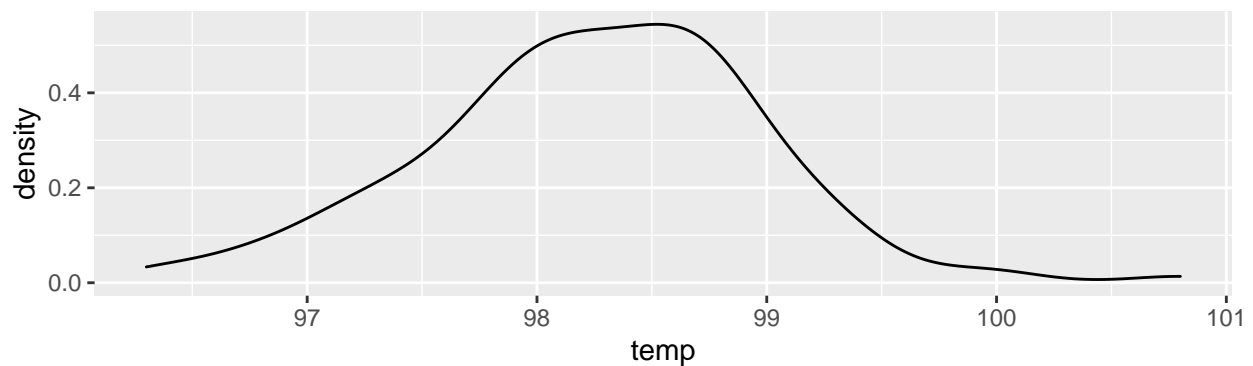- Let's investigate with measurements of the temperatures of 130 adults.

Read in data set

```
bodytemp = read.table('http://www.amstat.org/publications/jse/datasets/normtemp.dat.txt')
names(bodytemp) <- c('temp', 'sex', 'hr')
head(bodytemp)
```

```
##   temp sex hr
## 1 96.3   1 70
## 2 96.7   1 71
## 3 96.9   1 74
## 4 97.0   1 80
## 5 97.1   1 73
## 6 97.1   1 75
```

Make a plot

```
ggplot(data = bodytemp, mapping = aes(x = temp)) +
  geom_density()
```


Model

Sample Statistics

```r
mean(bodytemp$temp)
```

```
## [1] 98.24923
```

```r
sd(bodytemp$temp)
```

```
## [1] 0.7331832
```

```r
var(bodytemp$temp)
```

```
## [1] 0.5375575
```