Quantified Grad Student

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What I'm going to present

- Intro - why did I do this
- Data collection
- Analysis
- Future directions - other questions?

Motivation

- Entering grad school - how much time do I need to invest?
- Anecdotal: it will take all of your time
- Lots of claims, but no data

Questions

- How much time do I invest in Grad School?
  - How much time do I spend on campus?
  - How much time am I working on grad school stuff?
  - What percent of time that I am on campus am I actually getting work done?

One data point
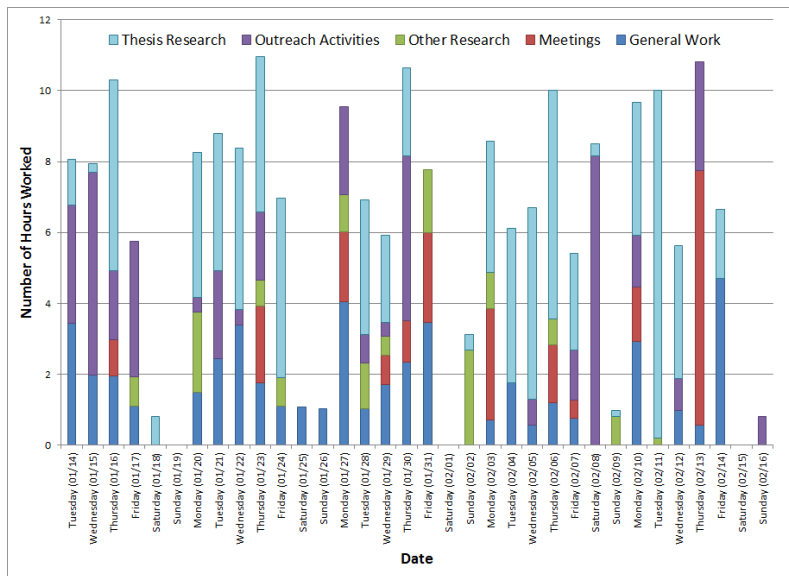
Who am I?

Grad student in Plant Biology

- Genomics (computational work), and local adaptation (field / greenhouse / lab work)
- Advisor says I'm making good progress
- How do I compare to other Grad students?
  - I'm probably not very representative... but then what is a "normal" grad student

Data Collection

Tools

- Android App: Gleeo
  - Time doing work
- Google Spreadsheet
  - Time I'm on campus

How do I categorize my time?

How many categories?

- ► Tracked everything in a spreadsheet for a week
- ► Partition the tasks into categories, with the least amount going into a "misc" bin
- ► Still iterating, implement another scheme starting fall semester

Analysis

Packages

- `lubridate` to work with dates, times, and intervals
- `dplyr` to work with dataframes
- `ggplot2` to make all the graphics

lubridate is pretty handy

```
# getting the week number from the date
clock.df$week <- week(clock.df$date)
# Using intervals, dividing the seconds in the
  # interval by the exact seconds in an hour
clock.df$campustime <- interval(
        ymd_hms(paste(clock.df$date,
                      clock.df$in_time)),
        ymd_hms(paste(clock.df$date,
                      clock.df$out_time))
        ) / ehours(1)
```

dplyr is neat

```
clock.df %>% group_by(day) %>%
             summarize(mean(campustime))
```

```
## Source: local data frame [5 x 2]
##
##     day mean(campustime)
## 1   Mon            9.277
## 2  Tues            9.449
## 3   Wed            8.721
## 4 Thurs            9.645
## 5   Fri            8.315
```
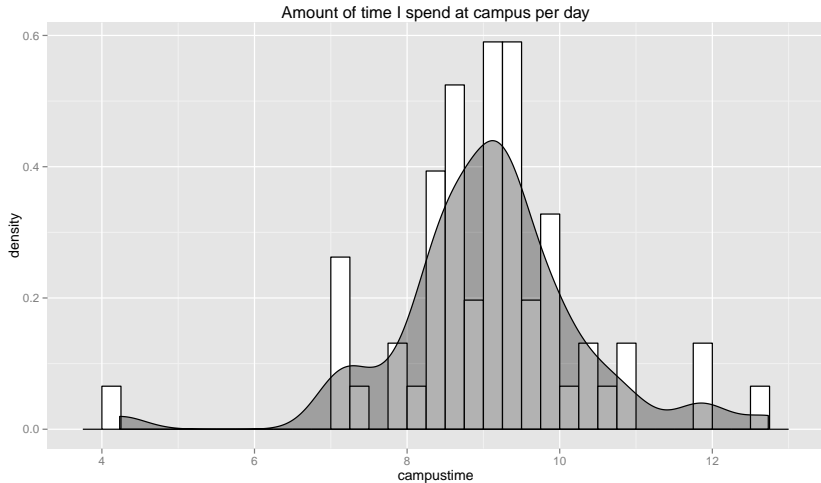
Campus Time

- Time that I am at my office / on campus each day, Monday - Friday
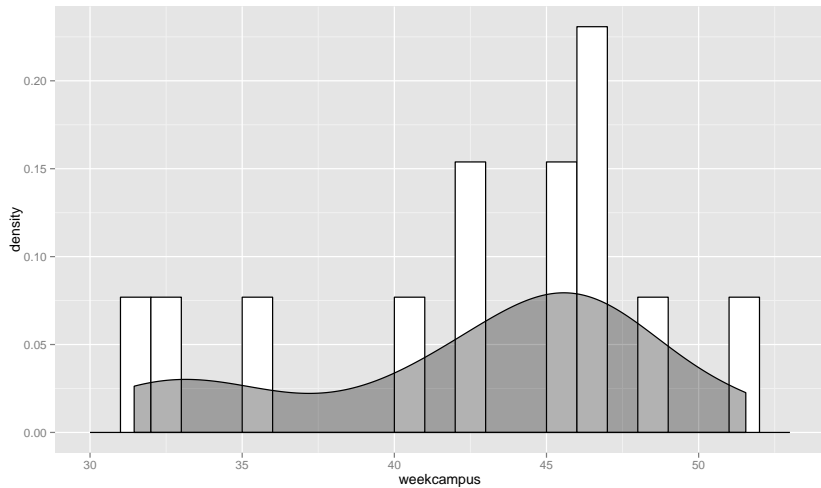
How long am I at campus?

Amount of time I spend at campus per day

```
## Min.  Mean  Max.
## 4.23  9.08  12.70
```
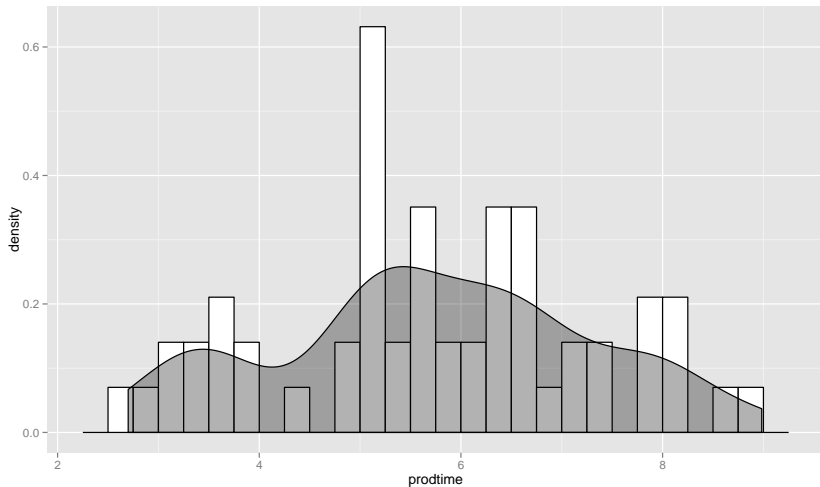
Grouped by weekday?
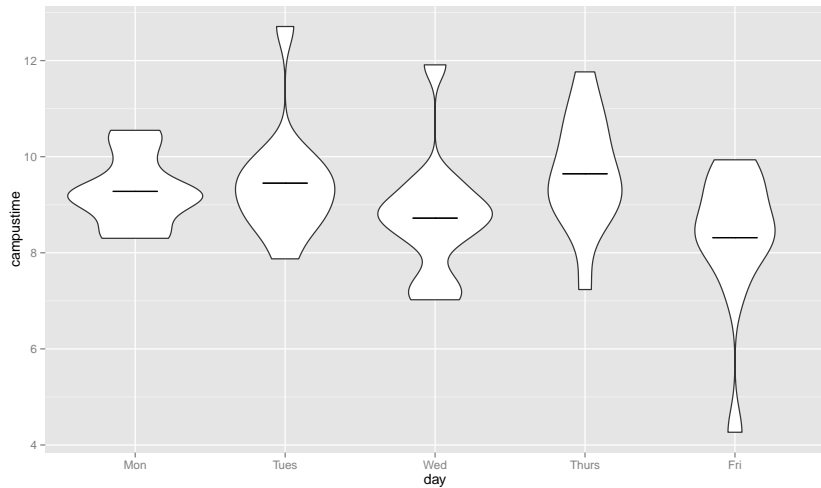
Time per week?


```
## Min. Mean Max.
## 31.4 42.6 51.6
```

Productive Time per day

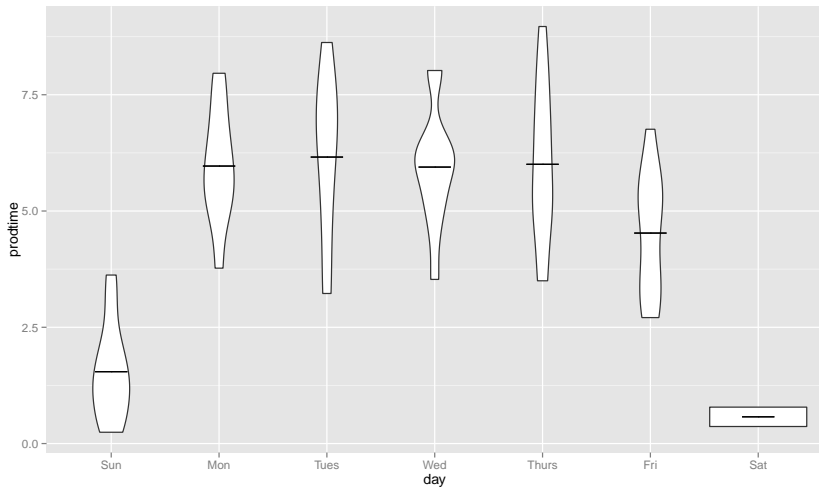$$ProductiveTime = TotalTrackedTime - PersonalTrackedTime$$
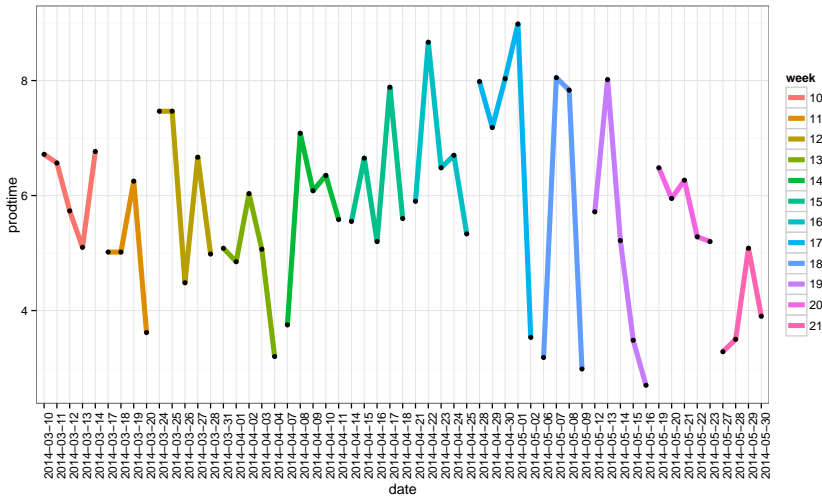
Distribution of Productive Time per day
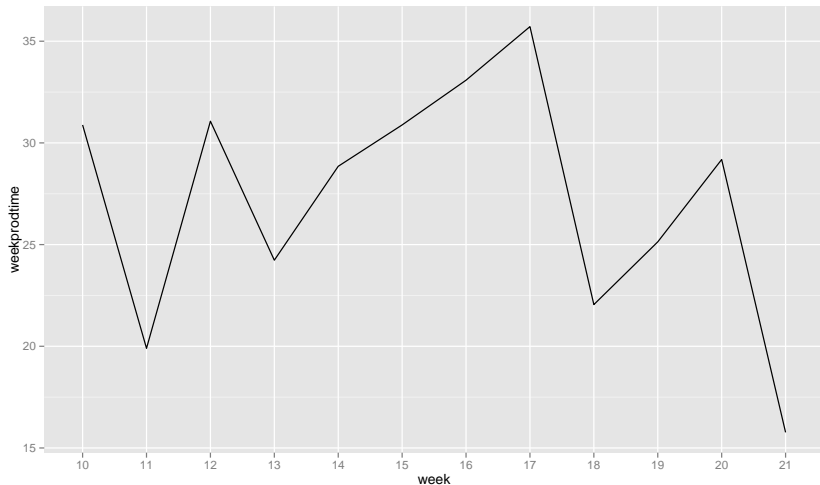


```
## Min. Mean Max.
## 2.70 5.73 8.98
```

Distribution of Productive Time Each Day

How does Productive Time vary over time?

Weekly Productive Time


```
## Min. Mean Max.
## 15.8 27.2 35.7
```

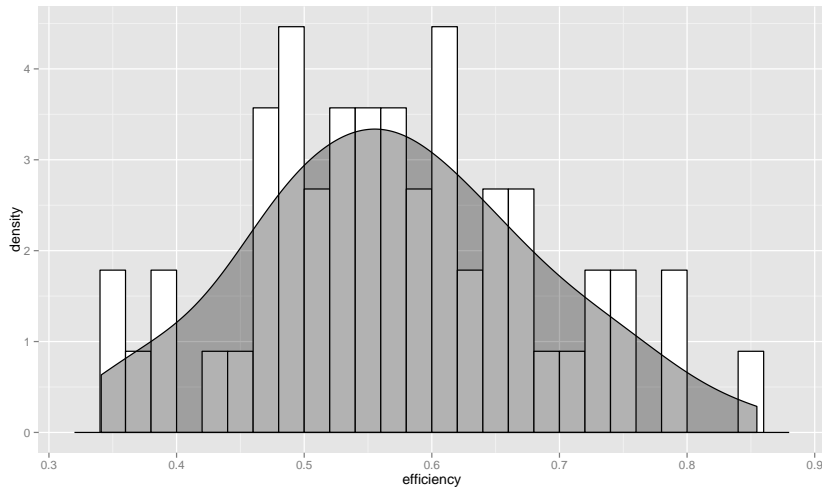# Efficiency

- When I am at campus, how much time of that am I actually working?

$$Efficiency = \frac{TotalTrackedTime - PersonalTrackedTime}{TimeAtCampus}$$

# lubridate is really handy here

My solution isn't elegant. . .

- make the interval that I am at campus, one per day
- for each tracked task, make an instant
- for loop to go by each campus interval and find which instants are within that interval, store in df
- populate a new df with only those instants in the interval
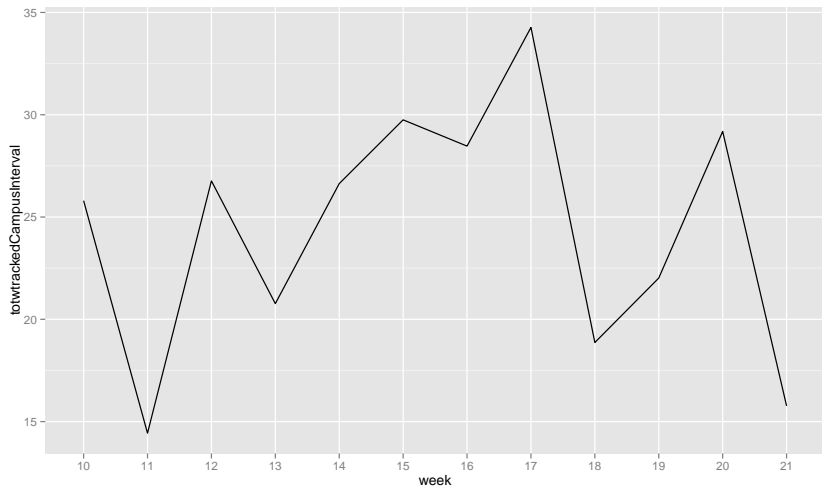 - for loop, and rbind

What is the distribution of my efficiency?


```
## Min.  Mean  Max.
## 0.341 0.572 0.855
```

How does my efficiency vary over time?
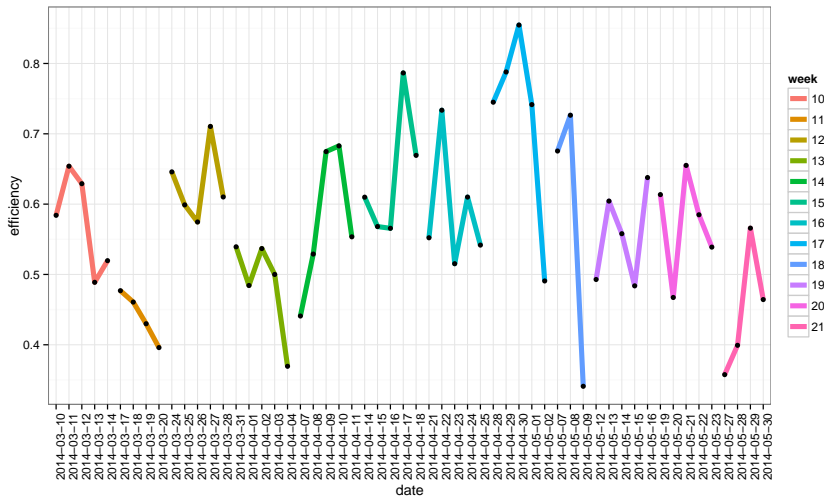
How does my efficiency vary by week?

In Summary

How much time do I invest in Grad School?

- I spend a mean of **9.08 hrs per day**, and **42.6 hrs per week** at campus
- I work a mean of **5.73 hours per day**, and **27.2 hours per week**

How productive am I?

- My mean productivity is **0.572** hrs worked / hr at campus

Project Data

- I haven't used my categorized tracked time data yet
- next goal: make a graph of time invested in projects as a function of date

Self Improvement?

- I've answered the questions I started with, but how can I use this to improve my studies?
- Act of tracking improving my focus?
- Guilt of bad data?

Advisor says:

> "... issues with Brownian Motion in accomplishing your projects..."

Future work

- Cal Newport and Deep Thought — is there a way to track this?
- How much do grad students read?
  - I can kind of answer this already

More Data and Passive tracking

- Moves app to potentially track my campus time, also time at gym
- Using Rescue Time to track computer usage
  - especially quick email usage — often not tracked
- Pull in weather data?
- What things can affect my productivity, and is it easy to collect these data?

This is on GitHub

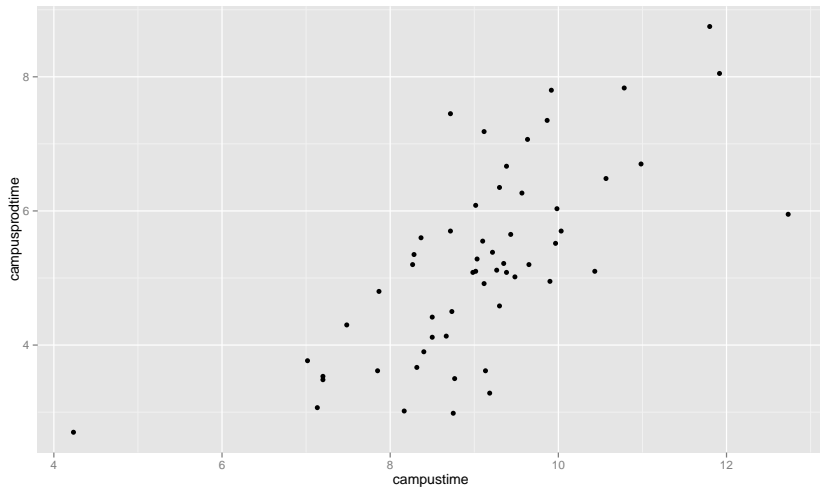https://github.com/dnedveck/qgs

- ./qgs/TCRUG
  - This presentation
- ./*_GleeoExport.csv
  - Time tracking data
- ./*_clocktime.csv
  - Campus time data

Any Questions?

- nedveck@gmail.com
- dnedveck.com
- https://github.com/dnedveck/qgs

x

Productive time at campus given time at campus

Efficiency given campus time