



# SoCal All Hands UseR Meeting Highlights 11/23/2019

Who am I?

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# About Perry

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- Motivates, mobilizes, and connects cross-functional teams with technical solutions and support
- Provides customer-focused Computer Professional services with Data Science / Systems Engineering experience in commercial and non-profit industries.
- Delivers system, network, and security support in a wide variety of business and home environments.
- Partners with clients for training and end-developer support efforts, especially in the areas of configuration management, operating system integration.

In Our Last Episode...

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# SoCal All Hands UseR Meeting 11/23/2019

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- Held in sunny Burbank at Warner Brothers training office
- Sponsors:
  - Warner Brothers (Provided continental breakfast)
  - UC Irvine MSBA (Provided a delicious lunch)
  - RStudio (Hex Stickers)
- CAUTION: 1 slide has strong language

# SoCal All Hands UseR Meeting 11/23/2019

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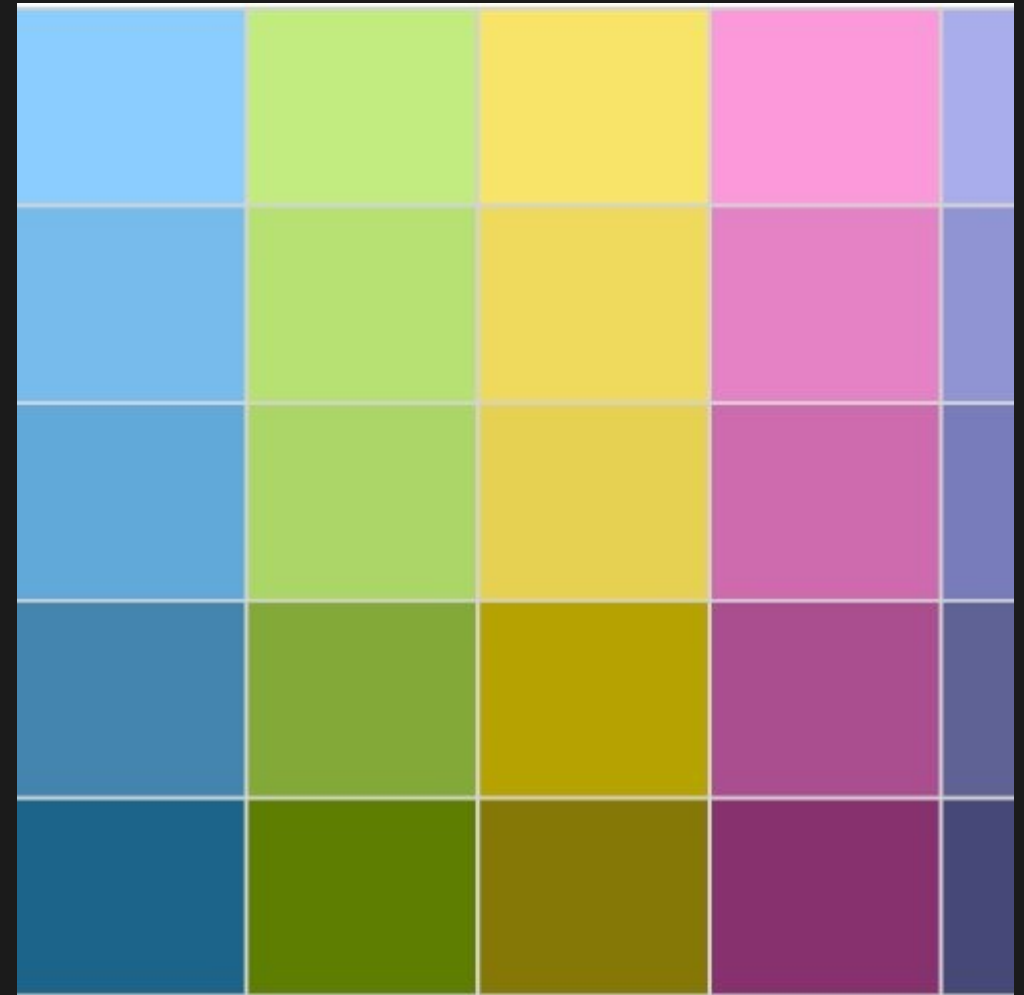
- An entire day of R presentations including a tutorial
  - Full materials for the talks at this GitHub repository:  
<https://github.com/laRusers/socalr2019>
  - Tweets:  
<https://zhiyang.netlify.com/post/socalr2019/>

# Pre Meeting Tutorial: Designing ggplots

- Presenters:  
Malcolm Barrett, Emil Hvitfeldt
- Tutorial notes here: [https://bit.ly/design\\_gg](https://bit.ly/design_gg)
- Github:
  - <https://github.com/malcolmbarrett/designing.ggplots>
- Slides:
  - <https://designing-ggplots.netlify.com/>
- Examples in slides are meant to be self-learning exercises
  - “Your Turn” sections facilitate learning

# Pre Meeting Tutorial: Designing ggplots (Part 2)

- Introduced themes
- Introduced the Okabe-Ito color-blind friendly palette
- Use the developer version of ggplot2 (not the stock version)
- Use warm colors to focus attention





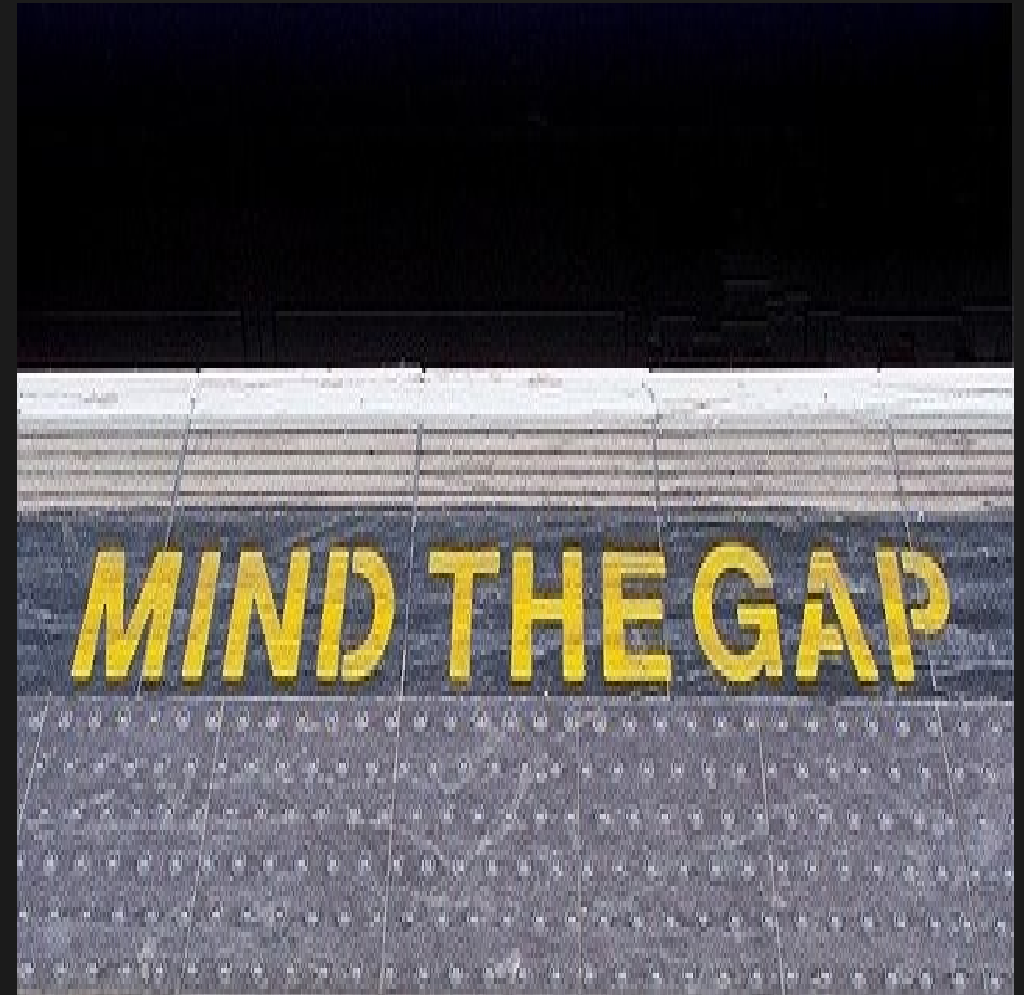
# Pre Meeting Tutorial: Designing ggplots (Part 3)

- Gray 50 is not the middle gray from a human perspective
  - Try Gray 69 instead
- Legends introduce mental burden
  - Use only if necessary
  - If unneeded, `legend.position=none`
- SLIDE 19, 20:  
First data set: Roman emperor death date and cause



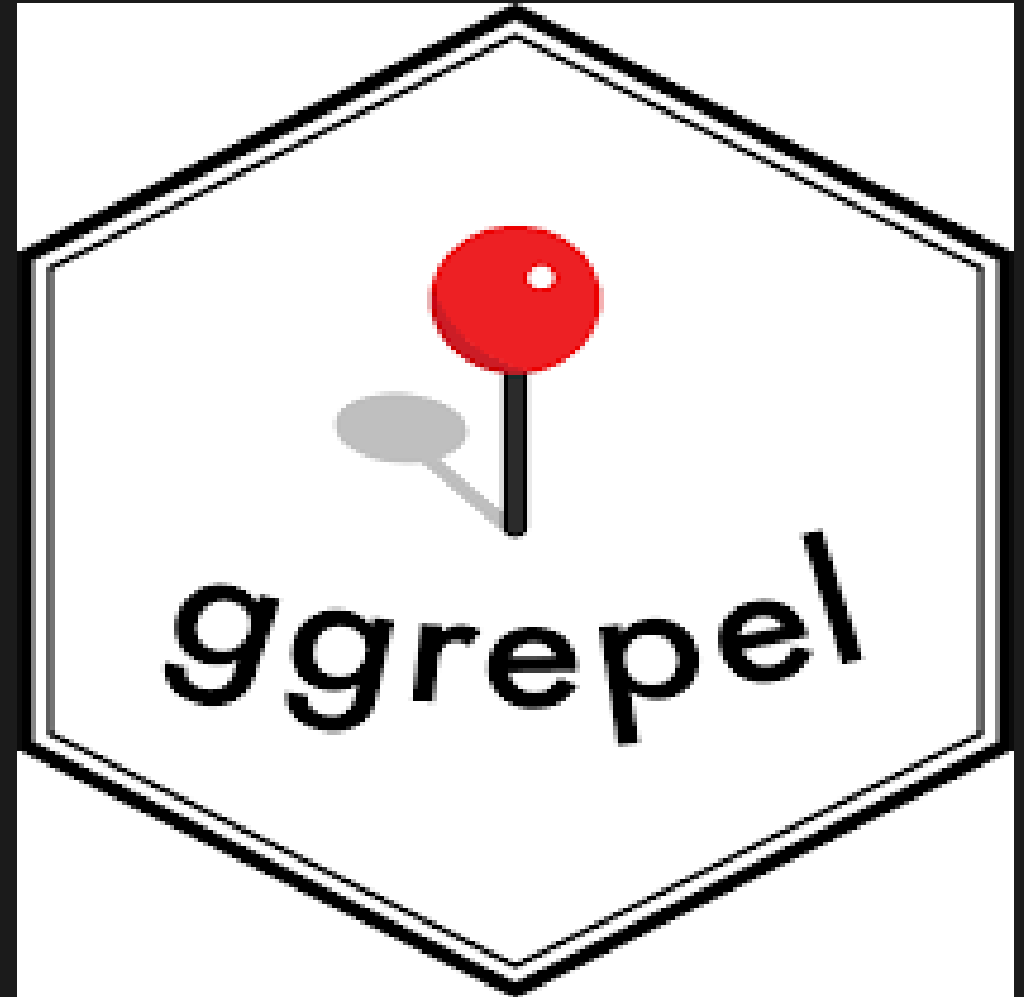
# Pre Meeting Tutorial: Designing ggplots (Part 4)

- SLIDE 36:  
Second data set: gapminder
  - Great for data visualization



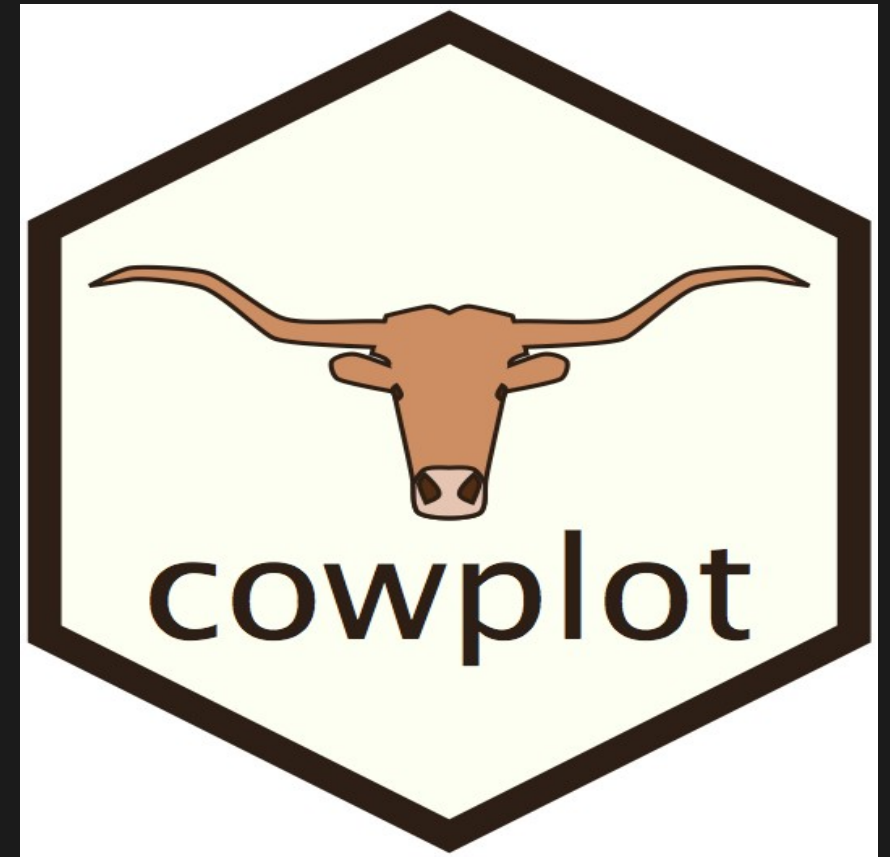
# Pre Meeting Tutorial: Designing ggplots (Part 5)

- SLIDE 43  
ggrepel
  - Repel overlapping text
  - Your Turn 2
  - hjust=0
    - Left justify
  - nudge\_x=0.06
    - Overwrites push pins
    - Number on the right varies depending on the scale



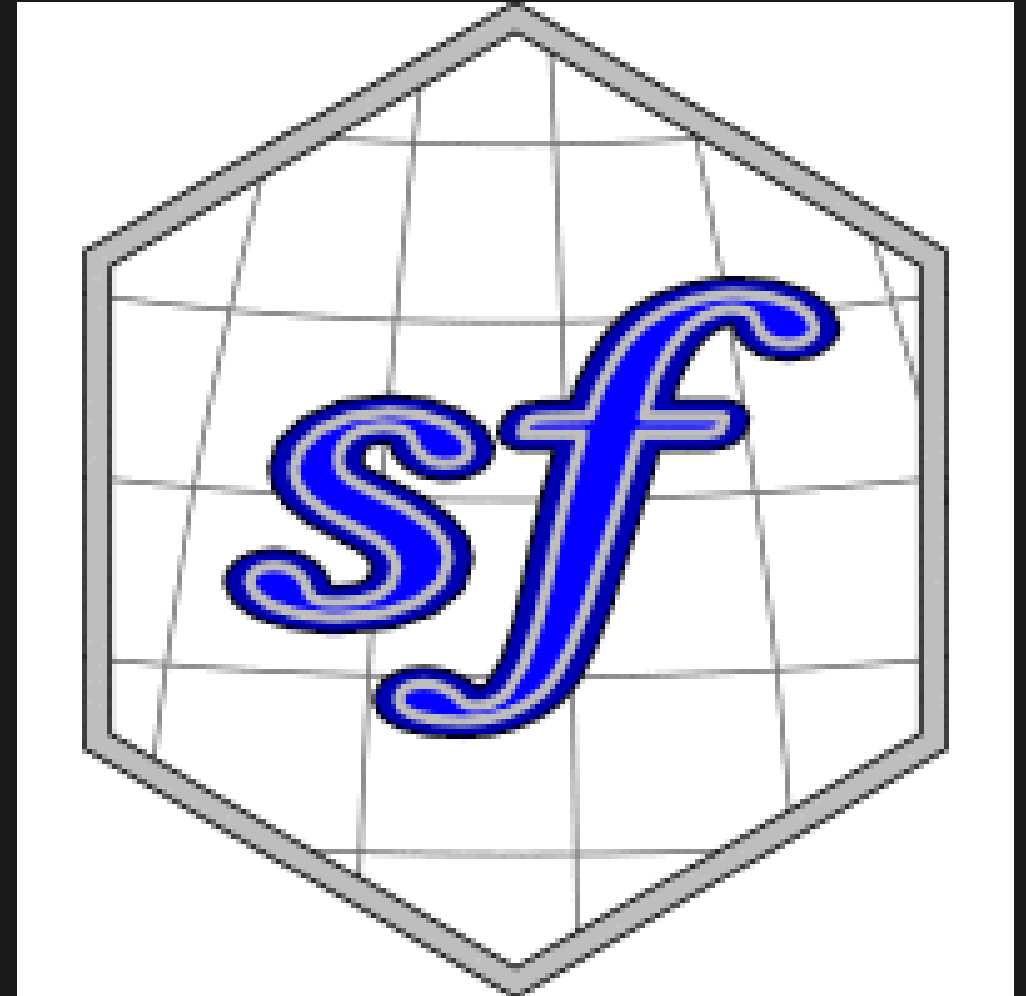
# Pre Meeting Tutorial: Designing ggplots (Part 6)

- SLIDE 54:  
cowplot Package
  - Great for annotations
    - No need to go into Illustrator
  - This produces grob's – Graphical Objects
  - Use ggsave to save your diagrams
  - Claus O. Wilke (c o w)
    - Book:  
Fundamentals of Data Visualization
    - <https://cran.r-project.org/web/packages/cowplot/vignettes/introduction.html>



# Pre Meeting Tutorial: Designing ggplots (Part 7)

- sf – R spatial package
  - Briefly discussed, check it out..



# Pre Meeting Tutorial: Designing ggplots (Part 8)

- SLIDE 68-77:  
facet\_wrap
  - You can now give variables without a leading tilde (~)
  - Remove:
    - Data shadow
    - Highlighted geom



# Pre Meeting Tutorial: Designing ggplots (Part 9)

- (running outta time...skipped some slides...)
- SLIDES 108-120:  
Patchwork
  - Glue it all together





# Welcome: Malcolm Barrett

- Welcome Slides:
  - <https://socal-allhands.netlify.com/>





# An Aside: Networking Tip → The Pac Man Rule

- Designed by Eric Holscher
  - @ericholscher
- Great video demonstrating this:  
<https://twitter.com/i/status/1111619036809449472>
  - @dylanbeattie



# Join SoCal R Users Group

- <http://socalrug.herokuapp.com/>
- Interact with others:
  - @la\_Rusers
  - @ocrug



# Sponsors

- Warner Brothers
- UC Irvine (Lunch)
- Rstudio (Hex Stickers)



# Alan Dipert – Software Development

- Bio:
  - Software Engineer
  - RStudio
  - @alandipert
  - Background not in R but originally in Web Development
- Shiny rocks



# Alan Dipert – Software Development (Part 2)

- Useful Links:
  - <https://happygitwithr.com>
  - <https://environments.rstudio.com>
  - <https://environments.rstudio.com/docker>



# Alan Dipert – Software Development (Part 3)

- Debugging Readings:
  - Review Advanced R (Debugging Section)
  - Mastering Software Development in R
  - How to Interpret Stack Traces in Shiny Apps



# Alan Dipert – Software Development (Part 4)

- Other tips:
  - Enlist rubber ducks:
    - Explain your ideas to a rubber duck
  - Keep a work journal and lab notes
  - Diagram/whiteboard copiously
  - Take a break
  - Sleep!



# Alan Dipert – Software Development (Part 5)

- Simplify functions
  - Keep them small
  - Greater than 10 lines, reduce!
- Isolate any code that interacts with externals / world-facing
- Test!
  - Use shinytest
  - Screenshots





# LA R Users Groups

- @RLadiesLA
- @RLadiesRiversd
- @RLadiesIrvine
- @RLadiesSB
- Wayne
  - ws@csun.edu
  - <https://tinyurl.com/socalrugslack-signup>

# WB Presentation

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- WB is hiring!
- Bachelors of Science (or equivalent) and up
  - Business problems
  - Computer Science
  - Stats/Inference

# WB Presentation (Part 2)

- R @ WB
  - Creation and distribution of content
  - DC
  - Consumer products
  - Shiny apps
  - R & Python
  - SQL (Snowflake)
  - Example Q: Which movie theaters would maximize sales (w/o empty theaters)
  - Optimization

# Dr. Song – Software Development

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- Studied in UW Madison
- Pharm
- Kite, A Gilead Company
- Talked briefly about Shiny and Markdown
  - Biomarker explorer:  
clinplot(?)

# Dr. Song – Software Development (Part 2)

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- Tips – Know:
  - Stats
  - Computations
  - Biochem
  - Simulations vs. Analysis
  - Exploratory vs. Confirmatory
- Packages to know:
  - Shiny
  - RMarkdown

# Dr. Song – Software Development (Part 3)

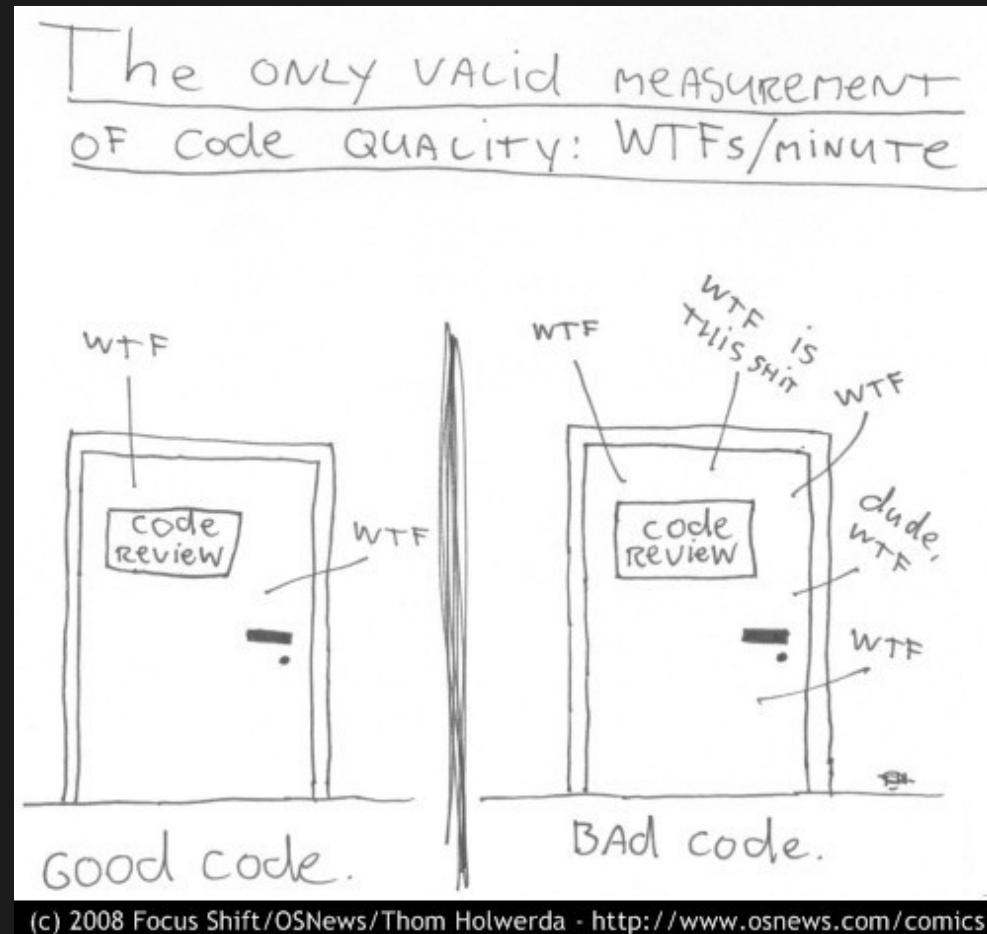
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- ML:
  - XGBoost
    - Line
      - Interpretation
      - Deep Learning

# Peter Foley – Code Reuse

- Slides:  
[https://github.com/peterfoley/clean\\_and\\_dry/blob/master/presentation/presentation.pdf](https://github.com/peterfoley/clean_and_dry/blob/master/presentation/presentation.pdf)
- Don't repeat yourself
  - Doing so yields side effects
- Reading: Clean code – Robert C. Martin
  - Video series wonderful, per the speaker
  - Costume changes were awesome

# Peter Foley – Code Reuse (Part 2)





# Peter Foley – Code Reuse (Part 3)

- Organizing:
  - There's a wonderful intermediate layer
  - Utility scripts
    - Shared configuration for shared needs
  - Action scripts



# Peter Foley – Code Reuse (Part 4)

- Reading: Wickham – R Packages
- Use:
  - `Devtools::load_all()`
- Tests what you're testing:
  - `use_coverage`



# Lightning Talk # 1

- Speaker: An Bui
  - @anbui
- Vegan package
  - Site by species matrix
- Cheese dataset
- Multivariate Datasets (MDS)
  - Use community analysis and community data to explore patterns within



# Lightning Talk # 2

- Speaker: Stevan Slezak
  - Cal Poly retired instructor
- Use linear algebra to practice calculation of batting average
- Social Media:
  - Github: `seslezak`
  - LinkedIn: `stevan-slezak-a3243914`





# Lightning Talk # 2 (Part 2)

- $BA = H / AB$ 
  - BA: Batting Average
  - H: Hits
  - AB: At Bats
  - VCV: Variance/Covariance



# Lightning Talk # 2 (Part 3)

- Red Line: slope –  $m$
- Package Stargazer:  
Tables in a readable way



# Lightning Talk # 3

- Speaker: Wendy Christensen
  - Github.com  
wendychristensen
  - Email:  
wchrister@gmail.com
- “The Assignment Problem”
  - Python guy chimed in with random offtop, who let this guy in???
- Use R to allocate employees into work shifts





# Lightning Talk # 3 (Part 2)

- 20 hours of code for initial release





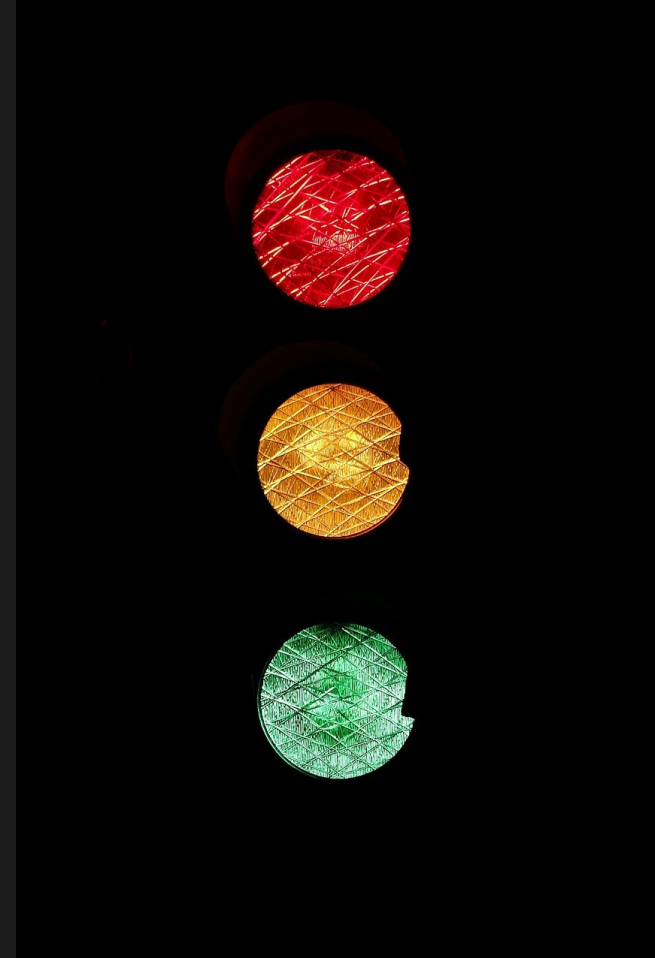
# Lightning Talk # 4

- Speaker: John Peach
- Slides:  
<https://github.com/laRusers/socalr2019/blob/master/2017-01-26-%20SoCal%20R%20All%20hands%20-%20Condition%20System%20in%20R>



# Lightning Talk # 4 (Part 2)

- Condition system in R
- Signaller – Throw Exception Handler / Catch
- Restart scheduler in call stack
- Throw → signal condition
- Signal condition → goes up the call stack



# Endnote Talk: R for Better Science in Less Time

- Julia Lowndes, PhD
  - @juliesquid
  - lowndes@nceas.ucsb.edu
  - <http://openscapes.org/media>
    - Build experiences
    - Mentorship
- Squid Explosion
  - They eat a lot of things we like
- Great art: @allison\_horst:  
Example: <https://openscapes.github.io/slides/betterscience/socalR#8>



# R for Better Science in Less Time (Part 2)

- Ocean Health Index (OHI)
  - <http://www.oh-science.org>
- Project Mission: Our path to better science in less time
- OHI Toolbox
  - Tidy data principles
  - Bookdown
  - Keep costs down
  - The carpentries
  - RopenSci





# R for Better Science in Less Time (Part 3)

- Additional Goals for the Project
  - Art & Storytelling
  - Big Missing Piece
    - How to work w/ the Data
  - If outside of the spiral, how do you enter the spiral?
  - Open Data Science is a Must



# R for Better Science in Less Time (Part 4)

- Data Wrangling 50-80% of Data Scientist's Time (Lohr 2014, NY Times)
- Data Science Mindset:  
<https://openscapes.github.io/slides/betterscience/socalR#20>
- Key: Separate Pieces





# R for Better Science in Less Time (Part 5)

- Model
  - Recipes
  - Parsnip
- Visualise
  - ggplot2
- More....

See:

<https://openscapes.github.io/slides/betterscience/socalR#22>



# R for Better Science in Less Time (Part 6)

- Speaker admits she is a recovering perfectionist
  - Build trust around shared needs
  - `janitor::clean_names`
  - `redoc::redoc_diff()`
- Other resources:
  - Seaside chats
  - Eco\_data\_science
- Slides:

<https://openscapes.github.io/slides/better-science/socallR#27>





# R for Better Science in Less Time (Part 7)

- Vocab
  - Transposing
- Bayside chats
- #TidyTuesday
- Main goal:
  - Vertical and Horizontal Leadership
  - Openscapes champions – Remote
- ~22 participants



# R for Better Science in Less Time (Part 8)

- Thanks:
  - RopenSci
  - Rstudio
  - RLadies





# R for Better Science in Less Time (Part 9)

- Feedback Loop:  
<https://openscapes.github.io/slides/betterscience/socalR#39>
- @openscapes: “We’re excited to share tips”
- Cute monsters – LOL
- rccp: Seamless integration of R/C++
- Every data is heterogeneous
- Bayside chats
  - #TidyTuesday



# R for Better Science in Less Time (Part 10)

- Main goal:
  - Vertical and Horizontal Leadership
  - Openscapes champions – Remote
    - ~22 participants
- Thanks:
  - RopenSci
  - Rstudio
  - RLadies



Questions???

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# Recap

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- Full day of thought-provoking R tutorial, lightning talks, and endnote presentations

# Perry Rivera

- Github:
  - <https://github.com/perryrivera/alldayuserconfnov2019>



# Perry Rivera

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- E-mail: [perry-rivera@alumni.calpoly.edu](mailto:perry-rivera@alumni.calpoly.edu)
- LinkedIn: [@pvrconsulting](#)





# Thank You!