# RUGS application for 'ggtedious'

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Dear RUGS committee members,

The following is a proposal for $900 for a RUGS sponsored workshop: 'ggtedious', https://evamaerey.github.io/ggtedious/. The objective is to work on package building skills, especially the 'tedious' tasks of writing tests and user-facing messages (warning and error) for the case of graphics-focused packages. The functions to be packaged are toy ggplot2 extensions, and so the tests and messages will be tailored further to that case. See the appendix for details on those functions. Workshop participants will gain experience with these skills, and a *video* recording will be posted so that a wider audience can benefit. If the RConsortium is willing to co-host this event, it could be posted to RConsortium's YouTube page. The 'ggtedious' github repo that we will add to during the workshop is intended to serve as a future reference point for participants and the video audience. It will house a fully-functioning ggplot2 extension package, albeit with few functions, that embraces best practices. To our knowledge, there are no R package workshop resources widely available that focus specifically ggplot2 extensions or graphics generally.

## The nature of the project and its goals

New developers may not be motivated to test and write error and warning messages because the rewards aren't as tangible as writing functionality. "Look my test didn't fail" feels magnitudes less exciting that "look at this awesome thing my function accomplishes — in one line of code!".

The promise of testing is peace of mind, contentment and confidence in your product. This is acknowledged nicely by the testthat introduction:

> 'Testing your code can be painful and tedious, but it greatly increases the quality of your code.' - {testthat} introduction

So, testing and messaging might not sound like much fun. To get going in this space, we invite people to tie their hands and sign up for the {ggtedious} workshop — committing to diving into this space of best practices! We'll try to make it as fun and memorable as possible: A goal of the workshop is that, when applying best practices in their future projects, ggtedious participants will be accompanied by warm-and-fuzzy memories from ggtedious workshop!

The workshop will have in-person and remote contingents. $150 is requested for a professional Zoom account purchase, which will allow the meeting to be recorded and span uninterrupted.

The remaining $750 honorarium funds will divided among 2 or 3 consultants. The first consultant will guide the package building itself — tentatively Andrew Heiss. Dr. Heiss has great experience communicating code and methods and bringing energy and warmth to virtual formats. The other consultant(s), to be finalized, will lend their expertise in the business of making the visualization package safe for users beyond the package author (testing, messaging, etc.). In-person hosting venues will be donated.

{ggtedious} is meant to complement other educational materials that focus *only* on building ggplot2 extension functionality (e.g. https://github.com/EvaMaeRey/easy-geom-recipes) — and not packaging.

## The beginning and end dates for the project

We are working on scheduling the workshop for late May 2024, accommodating the schedules of our team and in-person-location sponsors.

## A description of who will benefit from the project

Attendees will benefit from the project in gaining insights and tools for creating sound tests for packages focused on data visualization. To keep the workshop intimate and allow for brief introductions, we'll limit attendees to 20 or fewer online participants. In advertising, we'll set the expectation that this will be a code-along workshop. In person locations will accommodate attendees according to the physical limits of the venues and will include the University of Denver (Ritchie School of Engineering and Computer Science).

Furthermore, ggtedious workshop video will be posted about a month after the meeting and the a github repository will be maintained as reference for other new-to-ggplot2-extension developers for reference.

## A list of detailed activities along with relevant timelines

Pre Workshop

0. Apply for RUGS funding March, 2024.
1. Confirm technical participation, March, 2024.
2. Schedule meeting, coordinating with in person hosts and technical experts, and in-person locations.
3. Mid-March 2024 months prior to meeting. Announce at gathering for in-person locations & announce. Opportunity for virtual participation and launch sign-up form to participate in the workshop.
4. Late-March weeks prior select virtual participants (if pool is too large), and notify virtual participants.
5. Week prior to workshop, send reminders to workshop participants and experts.
6. Late May, run workshop.
7. Mid June, post video and share widely on social media
8. Solicit feedback from participants via a short survey.

Workshop

1. Introductions (10 minutes) and functionality (30 minutes)
2. Build out package file structure, files (1.25 hours), and tests https://evamaerey.github.io/ggtedious/

Post Workshop:

1. Post-workshop survey collecting feedback
2. Zoom video posting on YouTube ~ 1 month after meeting

## Your measure of success for the project

Provide positive and informative first-experiences in package writing, testing, and error/warning message writing is the primary goal of the workshop. This will be evaluated with a brief, voluntary post-workshop survey.

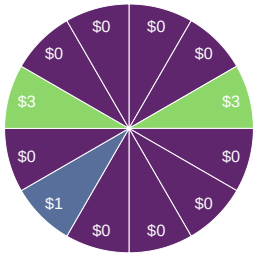
## A detailed financial plan and list of expenses

$1050 total

- $150 1X professional Zoom membership,
- $750 divided among consultants
- Donated: In person meeting space at the University of Denver

# Appendix: toy project proposed functions for the ggtedious workshop

To motivate our project we can think about data viz for a discrete probability problem. For a prize spin wheel, we'd like to calculate the 'expected value' for a single spin of the wheel. As a pre-step, we'd like to visualize the distribution of outcomes. Some work on this has already been done in the exploratory package [{ma206distributions}] found here: https://evamaerey.github.io/ma206distributions/.

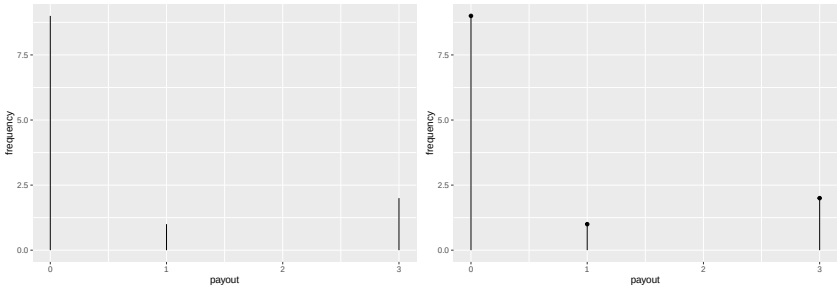



## Status quo code and output

```
prize_wheel <- data.frame(sector_type = c("No Prize", "Win $1", "Win $3"),
                                          frequency = c(9, 1, 2),
                                          payout = c(0, 1, 3))

library(ggplot2)
ggplot(prize_wheel,
       aes(x = payout, y = frequency, xend = payout, yend = 0)) +
  geom_segment()

last_plot() +
  geom_point()
```




## Proposed code that package should enable

```
library(ggplot2)
ggplot(prize_wheel, aes(x = payout, y = frequency) +
  geom_post()
```

```
ggplot(prize_wheel,aes(x = payout, y = frequency) +
  geom_lollipop()
```