A Badge System to Improve Incentives and Education: Reproducible Research and Open Science

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Reproducibility and Open Science Working Group
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Mozilla Science Lab Global Sprint 2015 product

Three parts

- Survey (Google Form)
- Results (Shinyapps.io)
- Badge (shields.io)

Plus a webpage

Webpage - tinyurl.com/ros-badge

Quick Links: 1) **Take Survey** 2) **View Results** 3) **Get Badge!** 4) **Provide Feedback**

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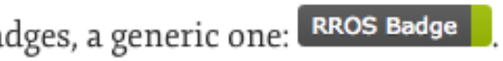
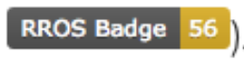
— What do the Badges look like? —

There will two forms for the badges, a generic one: 

. Based on your point value as shown in the table below, you can share a personalized badge (ie 

). Thanks to http://shields.io/ for providing this service!

LEVEL	CRITERIA
Gold	50 points
Silver	25 points
Bronze	10 points

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— Reproducible Research & Open Science Badge Criteria —

CRITERION	SCORE
Category One - Reproducibility	
Primary software tools for research are open source	1 pt
Submit your code for review	2 pts each
Perform code review for someone else	2 pts each
Code repositories have detailed, plain-English README files describing the computational environment and dependencies (including version numbers) to facilitate independent reproduction	1 pt each
Perform a reproducibility review for someone else	2 pts each
Publication has complementing code & data repositories that can be used to reproduce results	4 pts each
Computational environment captured (ie. in a virtual machine image/dockerfile/vagrantfile, etc.) in one or more research compendia	1 pt
Have the substantive results of your publication reproduced by someone else using your code and data	2 pts each

Survey Categories

- Reproducibility
- Open Data and Code
- Open Access Products

Survey

Reproducible Research & Open Science Badge Assessment

The purpose of this survey is to collect evidence to earn a Badge in recognition of your commitment to reproducible research and open science. More information and provide feedback @ https://github.com/sr320/tmp-badge ~Thanks

Your Name and affiliation

Reproducibility

Publication/preprint with complementing code & data repositories that can be used to reproduce results (4pts each)

Please submit the DOIs to your publications that have linked repositories, one DOI per line

Code repositories with detailed, plain-English README files describing the computational environment and dependencies (including version numbers) to facilitate independent reproduction (1pt each)

Please submit the URLs to your README files (one URL per line)

Results App

UW eScience Reproducibility and Open Science Group Web Application for Badges

This repository contains R code for a web application that collects data from the ROS group's survey for issuing badges to recognize efforts to make research more reproducible and open. Anyone is welcome to participate, you can take the survey to find your score here:
http://goo.gl/forms/jm08DOJ2El.

The app connects to the survey results and displays detailed responses for each person, and the score for each item. The responses include clickable URLs so you can easily find each person's reproducible research products. It also shows the total score and the badge colour corresponding to the total score (bronze/silver/gold).

You can try the app live at: https://benmarwick.shinyapps.io/ros_badge. If this doesn't work it's probably because the free server limit has been exceeded.

You can run the app locally (after installing RStudio) by using the following commands.

```
# only need to do this once, assuming your don't already have the shiny package
install.packages("shiny")
# now download & run the badges application, it will prompt you to install packages if you don'
shiny::runGitHub('ros_badges', 'benmarwick')
```

github.com/benmarwick/ros_badges

Results

shinyapps.io Powered by RStudio

UW eScience Reproducibility Badge Survey Responses

This page shows the detailed output from our Reproducibility and Open Science badge data collection.

The badge project is a way to increase the visibility of reproducible research and educate researchers about common tools and practices that enhance the Reproducibility of research.

See here for more information about the purpose of the badges.

Here is the form to submit details of your reproducible research and find out you score..
You can browse all the responses in one view here.

The drop-down below allows you to inspect the responses of other people who have already completed the survey. You can see their scores as well as URLs to further details of their research.

The code for this web app is available online here: https://github.com/benmarwick/ros_badges

Choose a name to see the details of their responses:

Reproducibility Badge Score

	person	total_score	rank	badge
1	Steven Roberts, University of Washington, School of Aquatic and Fishery Sciences	45.00	Silver	RROS Badge 45

	criteria	score
1	Publication has complementing code & data repositories that can be used to reproduce results	8.00
2	Code repositories have detailed, plain-English README files describing the computational environment and dependencies (including version numbers) to facilitate independent reproduction	3.00
3	Computational environment captured (ie. in a virtual machine image/dockerfile/vagrantfile, etc.) in one or more research compendia	1.00
4	Primary software tools for research are open source	1.00
5	Submit your code for review	2.00
6	Perform code review for someone else	2.00
7	Have the substantive results of your publication reproduced by someone else using your code and data	2.00
8	Perform a reproducibility review for someone else	2.00
9	Code is developed in one or more GitHub/BitBucket/GitLab or similar version-controlled open code repository	1.00
10	Code has one or more tests	1.00

Badge

— How do I get my embed code? —

Well we are working on making it more automated however you can role your own using this tutorial.

– Anyone that takes this survey is welcome to use this badge: 

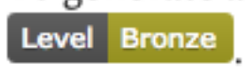
!

Here is the code

```
<a href="http://htmlpreview.github.io/?https://github.com/sr320/tmp-badge/blob/master/rros-badge-web.html"> <img src="https://img.shields.io/badge/RROS%20Badge--green.svg" alt="ROS Badge"></a>
```

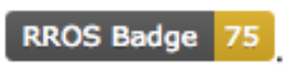
To generate a custom badge you will have to tweak the code a bit. Below are three examples for 

, 

, and 

.


```
<a href="http://htmlpreview.github.io/?https://github.com/sr320/tmp-badge/blob/master/rros-badge-web.html"> <img src="https://img.shields.io/badge/RROS%20Badge-75-yellow.svg" alt="ROS Badge"></a>
```

Would generate this badge 

. Just change `75` in the code to reflect your point value.

See Readme.md @

github.com/sr320/tmp-badge

For all the links.