

# {riskassessment} for R-package Validation

**PACKAGE CONTROL PANEL**

**SELECT PACKAGE**  
stringr

**SELECT VERSION**  
1.5.0 - latest version

Note: the latest package version will be used.

**STATUS**  
REVIEWED

**RISK**  
0.36

**SELECT OVERALL RISK**  
Low Medium High

RESET DECISION

**WRITE OVERALL COMMENT**  
Current Overall Comment: Risk was assigned 'Medium' by decision rules because the risk score was between 0.3 and 0.6

Upload Package

Maintenance Metrics

Community Usage Metrics

Report Preview

## COMMUNITY USAGE METRICS



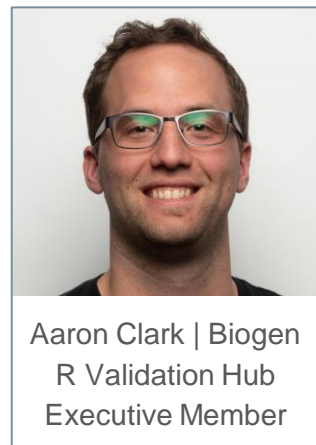
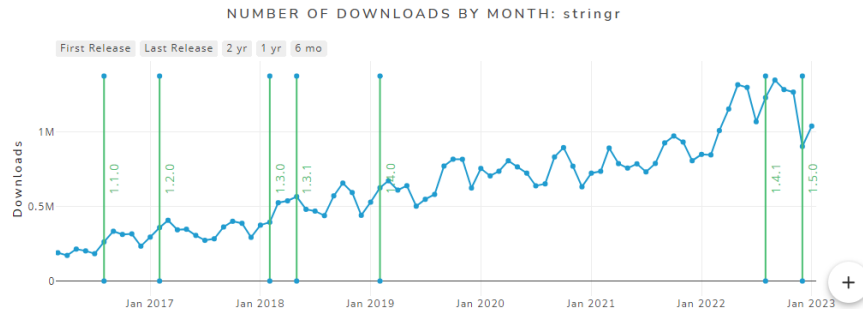
**FIRST VERSION RELEASE**  
13 Years Ago  
Time passed since first version release



**LATEST VERSION RELEASE**  
2 Months Ago  
Time passed since latest version release



**PACKAGE DOWNLOADS**  
13,573,193  
Number of downloads since last year



# VALIDATING OPEN-SOURCE SOFTWARE



- Consortia of ~50 companies (mostly pharma and biotech)
- Focus on designing/building a framework to validate R and R packages with an eye to all open-source software.
- [pharmar.org](http://pharmar.org) to learn about all workstreams and to get involved!
- The main goal is ensuring proper validation documentation exists in accordance with expectations of regulatory agencies.

## TWO TOOLS



Quantify Risk  
Programmatically



Interactive app for an  
Organization

# WHAT DO THEY DO?



{riskmetric} is a framework to quantify an R package's "risk"  
... by assessing several meaningful metrics designed to evaluate package development best practices, code documentation, community engagement, and development sustainability.



{riskassessment} is a full-fledged R package containing a shiny front-end  
... that augments the utility of {riskmetric}. The application's goal is to provide a central hub for an organization to review and assess the risk of R packages, providing handy tools and guide rails along the way.

# SOFTWARE QUALITY MITIGATES POTENTIAL RISKS



Sometimes “quality” is measurable! Software dev best practices dictate an R-package should have:

- A license
- Source code available for browsing
- An easy to contact maintainer
- Up-to-date news regarding new features and bugs
- A place to report bugs
- Evidence that new bugs are being addressed
- Package documentation & user guides/ perhaps a website
- Complete Function documentation
- Adequate test coverage
- Community usage
- [Many more!](#)

# WHY CREATE A SHINY APP?



The app extends the functionality of {riskmetric} by managing the review process **within an organizational context**, empowering the reviewer to:

- Analyze {riskmetric} output without the need to write R code
- Run {riskmetric} on the same machine with the same environment – creating central hub for reproducibility of risk scores
- Facilitate and store communication on certain packages / metrics
- Automatically categorize a package with an overall decision (i.e., low, medium, or high risk) based on {riskmetric} scores
- Or take a more hands-on approach categorizing packages using subjective opinions from yourself or consensus from other users
- Generate reports with the risk score, metrics outputs, reviewer comments, and more
- Log assessments in a database for future viewing or historical backup
- Leverage user authentication with admin roles to manage users and tasks like org-level metric weighting

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# DEMO ON SHINYAPPS.IO



# Links



[bit.ly/raa\\_demo](https://bit.ly/raa_demo)



[bit.ly/raa\\_gh](https://bit.ly/raa_gh)  
[bit.ly/raa\\_docs](https://bit.ly/raa_docs)



[bit.ly/raa\\_survey](https://bit.ly/raa_survey)



[pharmar.org/](https://pharmar.org/)

# CURRENT



# DEV TEAM



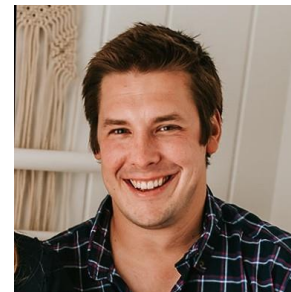
Aaron Clark, Biogen



Robert Krajcik, Cytel



Jeff Thompson, Cytel



Andrew Borgman, Biogen



[bit.ly/riskassessment\\_gh](https://bit.ly/riskassessment_gh)



Lars Anderson,  
Boehringer-Ingelheim



Imran Hossain,  
Cytel



Scott Schumacker,  
Canary Medical

DEMO ON SHINYAPPS.IO



[bit.ly/raa\\_demo](https://bit.ly/raa_demo)

# Let's Connect



[bit.ly/raa\\_demo](https://bit.ly/raa_demo)



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