Topic: **Migrating (Somewhat) From SAS to R**

Case Studies in SAS Integration

Welcome to the Case Study!

Today's Lecture

- If you are in healthcare or health research, you probably will end up using SAS for the rest of your life in some way

- So we can't really "break up" with SAS

- But we can't really "live" with it either (due to technological limitations)
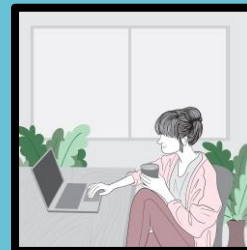
- What is the offramp?

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Can Scientists "Break Up" with SAS?

- We may have our disagreements, but we probably cannot break up with SAS.

- But we can find ways to get along with it better.

- One way is by using open source R for some things that SAS is not good at – but still keeping your SAS shop.

- Case studies on how to keep SAS going while you adopt R!

Resources

A SAS-to-R Success Story

By Elizabeth J. Atkinson
https://posit.co/resources/videos/a-sas-to-r-success-story/

R Package:

SASMap – co-author Nic Crane of Mango Solutions:
https://cran.r-project.org/web/packages/sasMap/index.html

SAS to R at a Research Hospital

- Watch video if you can

- Head of biostatistics core – concerned about ongoing costs associated with SAS

- Can we offload some of SAS's work to R?

- What can we do in this clinical research/academic environment?

Our biostatistics group has historically utilized SAS for data management and analytics for biomedical research studies, with R only used occasionally for new methods or data visualization. Several years ago and with the encouragement of leadership, we initiated a movement to increase our usage of R significantly. Multiple steps were taken to achieve this goal including: the introduction and training of RStudio, creation of new R functions and packages that mimic locally written SAS macros, and education for current and new staff. Critical to our current success has been a team of R enthusiasts who have become resources for different aspects of R. This presentation will highlight how we as a biomedical research institute were able to transition from SAS to R, lessons learned along the way, and current struggles.

View Slides

Elizabeth J. Atkinson

Elizabeth J. Atkinson Assistant Professor of Biostatistics A Fellow of the American Statistical Association, and Ordinary Member of the R Foundation. My research is in data visualisation, exploratory data analysis, multivariate methods, data mining and statistical computing. I have developed methods for visualising high-dimensional data using tours, projection pursuit, manual controls for tours, pipelines for interactive graphics, a grammar of graphics for biological data, and visualizing boundaries in high-d classifiers.

Lessons Learned from SAS-to-R Success Story

- You need to set up your own internal R Helpdesk

- You need to set up your own internal R trainings

- You need to organize your R work in such a way that everyone is following a standard (e.g., what packages are we using for what project?)

- You basically have to all the work yourself that SAS (as a company) does for you.

- So you NEED data scientists on staff who can act as a SAS to R conversion

OMG! How???

- I met Nic Crane of Mango Consulting at a conference a few years back

- She and colleagues designed this "package" in R called sasMap

- They are a UK shop, and were helping migrate some government SAS operations to R

- This package has commands in R that help you estimate how much work it will be to rebuild the SAS code (e.g., how many PROCs? Macro calls? Etc.)

Package 'sasMap'

October 14, 2022

Title Static 'SAS' Code Analysis

Version 1.0.0

Maintainer Nic Crane <ncrane@mango-solutions.com>

Description A static code analysis tool for 'SAS' scripts. It is designed to load, count, extract, remove, and summarise components of 'SAS' code.

Depends R (>= 3.2.4)

Imports readr, stringr, stringi

Suggests testthat, markdown

URL https://github.com/MangoTheCat/sasMap

BugReports https://github.com/mangothecat/sasMap/issues

License MIT + file LICENSE

RoxygenNote 6.0.1

NeedsCompilation no

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This Data Flow Out of SAS is Not Stopping

- Old SAS shops can't afford to keep SAS

- They have to rebuild undocumented macros from the ground up in some other language

- No such thing as a **SAS to SQL conversion**

- No one wants a "new" SAS shop (new physical server set-up)

- But people want to adopt SAS Viya and other analytics tools

- SAS does AI – how are we going to work it into our pipeline?

Questions?

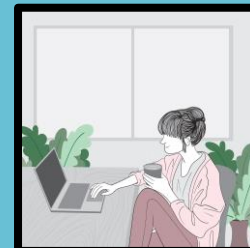**Facilitator:** Monika M. Wahi, MPH, CPH

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