

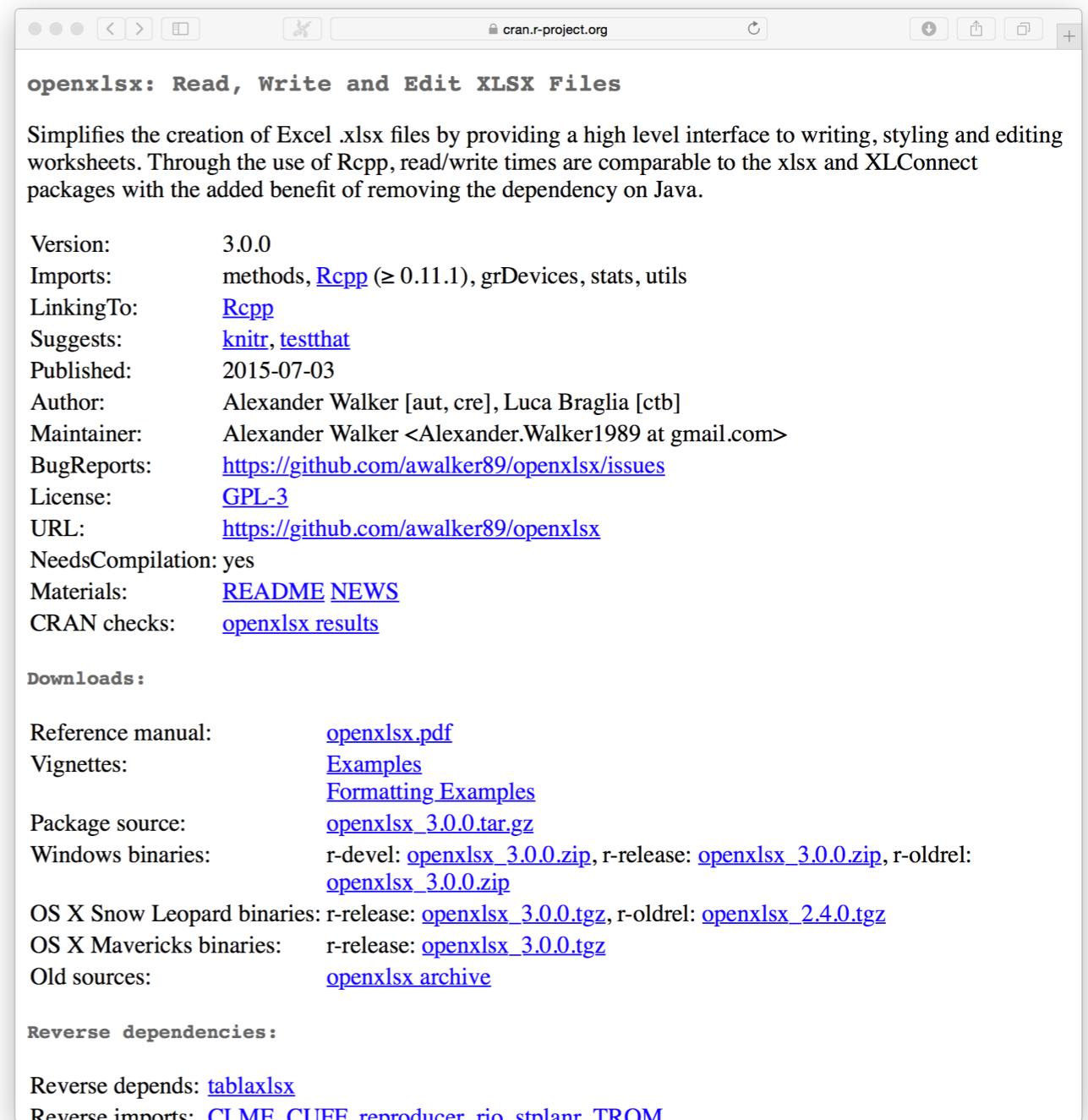
# Introduction to openxlsx

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# openxlsx?

- R package for creating Excel workbooks
- Ability to read and edit Excel workbooks
- Great for sharing result from R with others
- Written in C for speed and thus removes dependency on Java; interfaced with Rcpp
- Created by Alexander Walker



The screenshot shows the CRAN package page for 'openxlsx' on cran.r-project.org. The page title is 'openxlsx: Read, Write and Edit XLSX Files'. A brief description follows: 'Simplifies the creation of Excel .xlsx files by providing a high level interface to writing, styling and editing worksheets. Through the use of Rcpp, read/write times are comparable to the xlsx and XLConnect packages with the added benefit of removing the dependency on Java.' Below the description is a table of package details:

Version:	3.0.0
Imports:	methods, <a href="#">Rcpp</a> (≥ 0.11.1), grDevices, stats, utils
LinkingTo:	<a href="#">Rcpp</a>
Suggests:	<a href="#">knitr</a> , <a href="#">testthat</a>
Published:	2015-07-03
Author:	Alexander Walker [aut, cre], Luca Braglia [ctb]
Maintainer:	Alexander Walker <Alexander.Walker1989 at gmail.com>
BugReports:	<a href="https://github.com/awalker89/openxlsx/issues">https://github.com/awalker89/openxlsx/issues</a>
License:	<a href="#">GPL-3</a>
URL:	<a href="https://github.com/awalker89/openxlsx">https://github.com/awalker89/openxlsx</a>
NeedsCompilation:	yes
Materials:	<a href="#">README</a> <a href="#">NEWS</a>
CRAN checks:	<a href="#">openxlsx results</a>

Below the package details is a 'Downloads:' section with links to various package versions and documentation:

Reference manual:	<a href="#">openxlsx.pdf</a>
Vignettes:	<a href="#">Examples</a> <a href="#">Formatting Examples</a>
Package source:	<a href="#">openxlsx_3.0.0.tar.gz</a>
Windows binaries:	r-devel: <a href="#">openxlsx_3.0.0.zip</a> , r-release: <a href="#">openxlsx_3.0.0.zip</a> , r-oldrel: <a href="#">openxlsx_3.0.0.zip</a>
OS X Snow Leopard binaries:	r-release: <a href="#">openxlsx_3.0.0.tgz</a> , r-oldrel: <a href="#">openxlsx_2.4.0.tgz</a>
OS X Mavericks binaries:	r-release: <a href="#">openxlsx_3.0.0.tgz</a>
Old sources:	<a href="#">openxlsx archive</a>

At the bottom of the page are sections for 'Reverse dependencies:' and 'Reverse imports:', each containing a single link.

# The workflow



*Lots of importing,  
manual* formatting,  
and *inconsistent*



# The workflow



A ***bit of code*** and  
***automated*** formatting

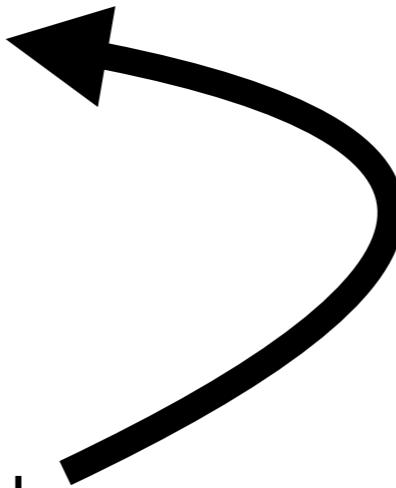


***Reproducible***



# openxlsx workflow

- Create the workbook
  - Add worksheet
    - Add data
    - Format worksheet
  - Write the workbook

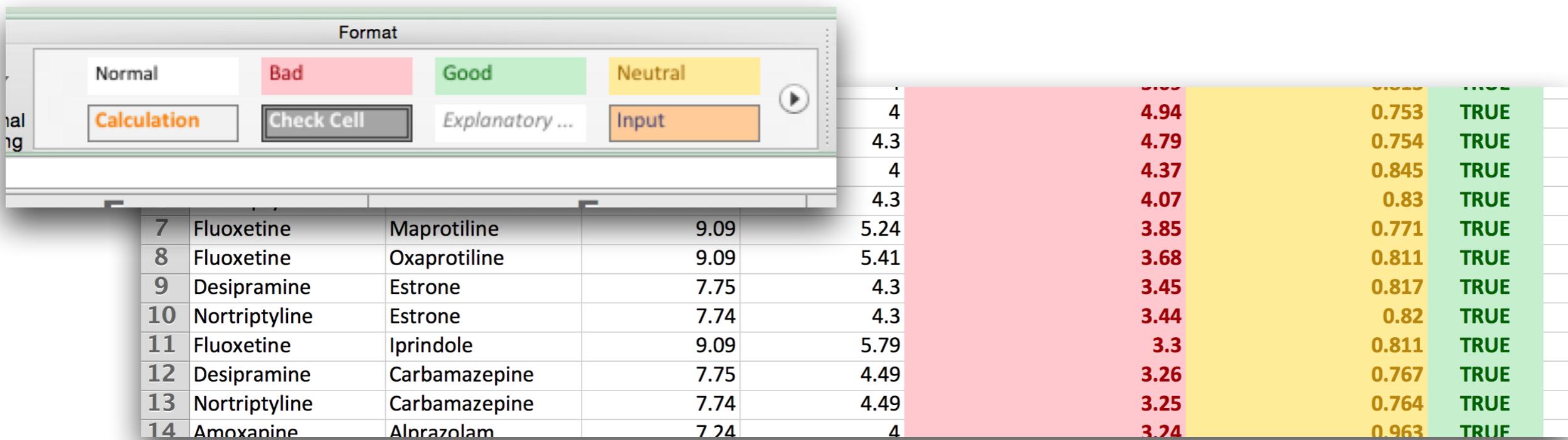


# Cell colors

```
cs.green <- createStyle(textDecoration="bold", fontColour="#006100",
                         bgFill="#c6efce", fgFill="#c6efce")
```

```
cs.pink <- createStyle(textDecoration="bold", fontColour="#9c0006",
                         bgFill="#fffc7ce", fgFill="#fffc7ce")
```

```
cs.amber <- createStyle(textDecoration="bold", fontColour="darkgoldenrod",
                         bgFill="#ffed98", fgFill="#ffed98")
```



The screenshot shows a software interface with a toolbar at the top labeled "Format". The toolbar includes buttons for "Normal", "Bad" (highlighted in pink), "Good" (highlighted in green), "Neutral" (highlighted in yellow), "Calculation", "Check Cell", "Explanatory ...", and "Input". Below the toolbar is a table with 14 rows of data. The table has columns for ID (1-14), Drug A, Drug B, Mean, and SD. The rows are color-coded: rows 1-4 are pink (Bad), rows 5-8 are yellow (Neutral), and rows 9-14 are green (Good). The "Bad" row (row 1) contains values: 4, 4.94, 0.753, TRUE. The "Neutral" row (row 5) contains values: 4.3, 4.79, 0.754, TRUE. The "Good" row (row 9) contains values: 4, 4.37, 0.845, TRUE.

1							
2							
3							
4							
5							
6							
7	Fluoxetine	Maprotiline	9.09	5.24	4.94	0.753	TRUE
8	Fluoxetine	Oxaprotiline	9.09	5.41	4.79	0.754	TRUE
9	Desipramine	Estrone	7.75	4.3	4.37	0.845	TRUE
10	Nortriptyline	Estrone	7.74	4.3	4.07	0.83	TRUE
11	Fluoxetine	Iprindole	9.09	5.79	3.85	0.771	TRUE
12	Desipramine	Carbamazepine	7.75	4.49	3.68	0.811	TRUE
13	Nortriptyline	Carbamazepine	7.74	4.49	3.45	0.817	TRUE
14	Amoxapine	Alprazolam	7.24	4	3.44	0.82	TRUE
					3.3	0.811	TRUE
					3.26	0.767	TRUE
					3.25	0.764	TRUE
					3.24	0.963	TRUE

# Color palettes

## [color-hex.com](http://color-hex.com)

## [ColorBrewer2.org](http://ColorBrewer2.org)

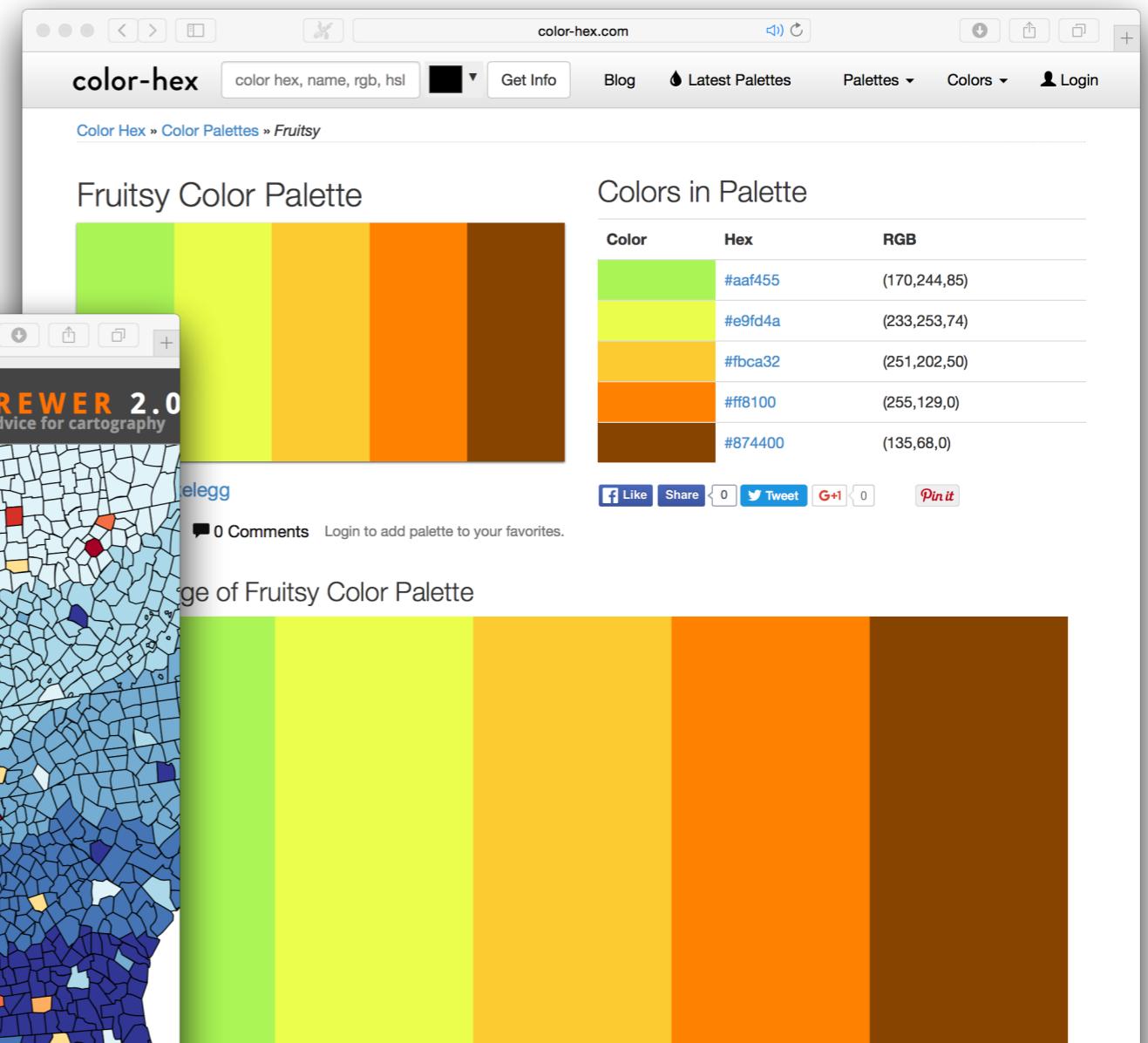
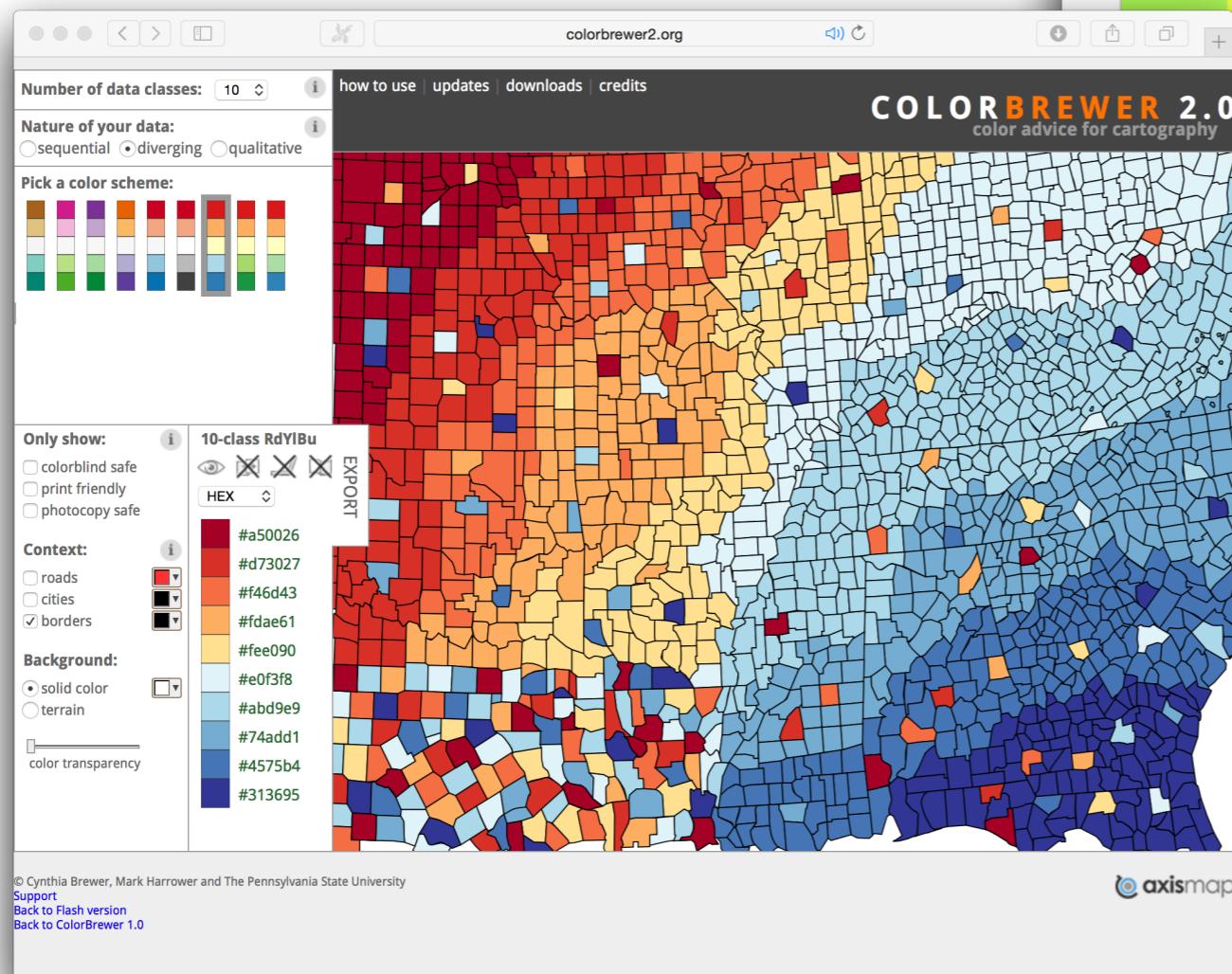
The screenshot shows the ColorBrewer2.org interface. On the left, there are several filter panels: 'Number of data classes' (set to 3), 'Nature of your data' (sequential selected), 'Pick a color scheme' (Multi-hue selected), 'Only show:' checkboxes for colorblind safe, print friendly, and photocopy safe, 'Context:' checkboxes for roads, cities, and borders (borders is checked), and 'Background:' checkboxes for solid color (selected) and terrain. Below these are color swatches for '3-class BuGn' (#e5f5f9, #99d8c9, #2ca25f) and 'color transparency'. The main area features a map of the United States where states are colored according to a sequential color scheme. To the right of the map is a grid of 25 color swatches labeled with their hex codes: #dd4b39, #46a510, #333333, #b3d4fc, #e7bf47, #3090c0, #a27eaf, #61456a, #33659a, #00ff7f, #fe4902, #fe4c00, #ffe5ea, #e8ffb2, #fff0b2, #ff5ab2, #5afffa, #e64886, #ff5a5f, #eed5d2.

The screenshot shows the color-hex.com website. At the top, there's a navigation bar with links for 'Get Info', 'Blog', 'Latest Palettes', 'Palettes', 'Colors', and 'Login'. The main content area is titled 'Color Hex Color Codes' with a sub-section 'Color Hex Color Codes'. It includes a brief description of the site's purpose and a note about generating CSS code. Below this is a section titled 'Users Latest Favorite Colors' featuring a grid of 25 color swatches. Each swatch is accompanied by its hex code: #dd4b39, #46a510, #333333, #b3d4fc, #e7bf47, #3090c0, #a27eaf, #61456a, #33659a, #00ff7f, #fe4902, #fe4c00, #ffe5ea, #e8ffb2, #fff0b2, #ff5ab2, #5afffa, #e64886, #ff5a5f, #eed5d2.

# Color palettes

## [color-hex.com](http://color-hex.com)

## [ColorBrewer2.org](http://ColorBrewer2.org)



# Number of digits

```
cs.1digits <- createStyle(numFmt=paste0("0.", paste0(rep(0, 1),collapse="")))

cs.2digits <- createStyle(numFmt=paste0("0.", paste0(rep(0, 2),collapse="")))

cs.3digits <- createStyle(numFmt=paste0("0.", paste0(rep(0, 3),collapse="")))

cs.4digits <- createStyle(numFmt=paste0("0.", paste0(rep(0, 4),collapse="")))
```

1234.56789	GENERAL
1234.6	1 digit
1234.57	2 digits
1234.568	3 digits
1234.5679	4 digits

# Row & column titles

```
cs.header <- createStyle(textDecoration="bold",  
                         halign="center",  
                         border="Bottom")  
  
cs.rows <- createStyle(textDecoration="bold",  
                         halign="left",  
                         border="Right")  
  
cs.titles.tables <- createStyle(textDecoration="bold",  
                                 halign="center")
```

	A	B	C	D
1	Entity1	Entity2	Entity1_Obs	Entity2_Obs
2	Fluoxetine	Alprazolam	9.09	
3	Citalopram	Alprazolam	8.94	
4	Fluoxetine	Estrone	9.09	4
5	Amitriptyline	Alprazolam	8.37	
6	Amitriptyline	Estrone	8.37	4
7	Fluoxetine	Maprotiline	9.09	5.1
8	Fluoxetine	Oxaprotiline	9.09	5.4
9	Desipramine	Estrone	7.75	4
10	Nortriptyline	Estrone	7.74	4

# Identifying cells

Column1	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	colnames
setosa	5.01	3.43	1.46	0.25	
versicolor	5.94	2.77	4.26	1.33	
virginica	6.59	2.97	5.55	2.03	

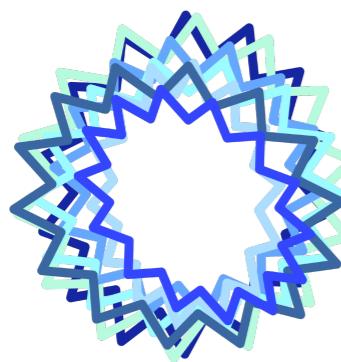
STANDARD DEVIATION					
Column1	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	
setosa	0.352	0.379	0.174	0.105	in R (2, 2)
versicolor	0.516	0.314	0.470	0.198	
virginica	0.636	0.322	0.552	0.275	in Excel (3, 3)

rownames

# Thank you!



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