
PERSONALIZE YOUR OWN GGLOT THEME

SERAPHINA KISSLING, 01.12.2022



INTRODUCTION



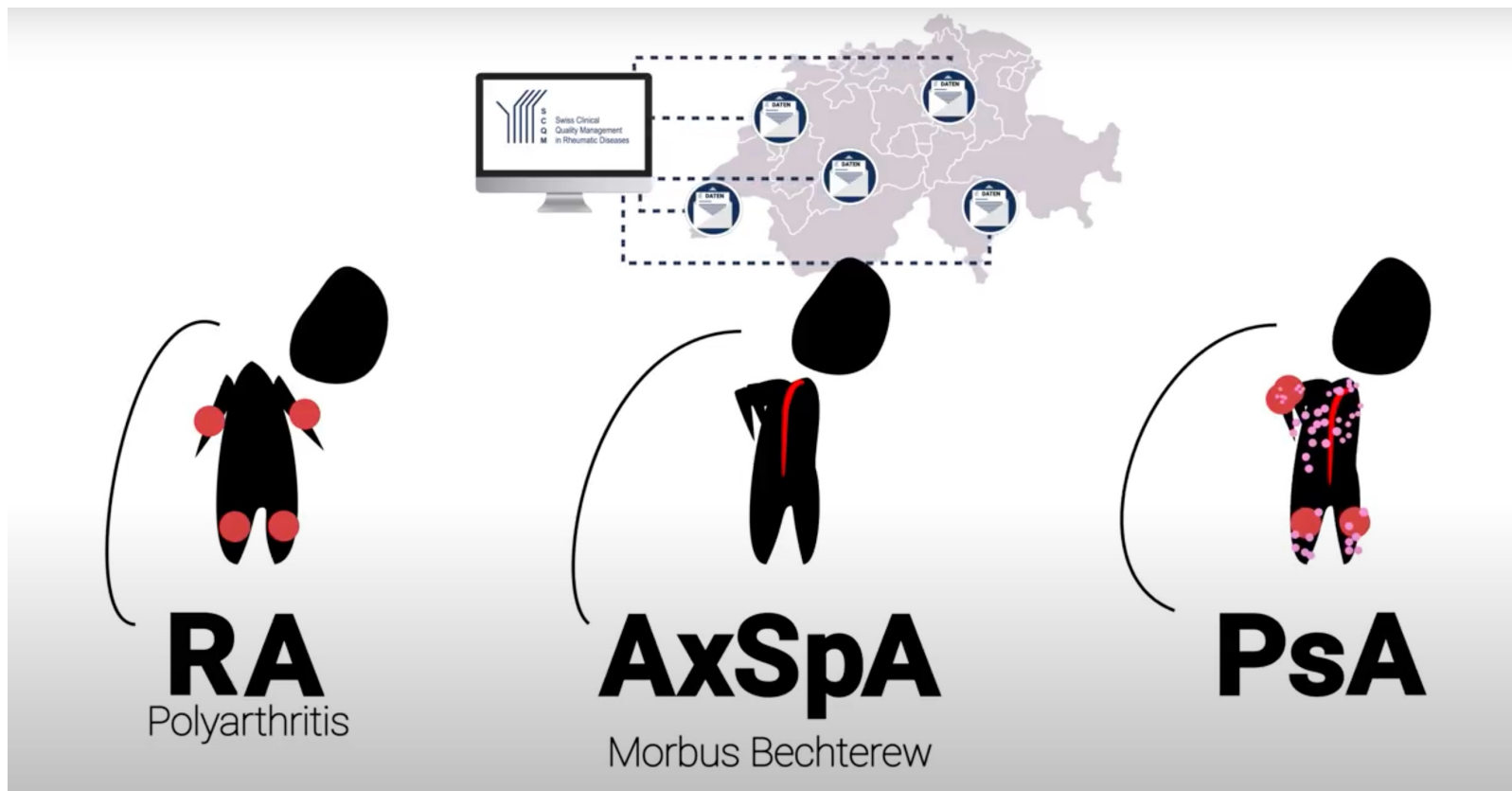
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- uses ggplot for graphs in reports and manuscripts
- knows how to customize colors etc
- tired of copy-pasting ggplot styling from old projects
- got hooked on the idea of a SCQM ggplot theme during Rachel's R-Ladies Zurich talk in 2021

SCQM FOUNDATION



<https://www.scqm.ch/ueber-uns/video/>



CODE-ALONG EXAMPLE: SCQM THEME

→ download the files from https://github.com/rladies-zurich/ggplot_theme and code along!



SIMULATING SCQM DATA

```
scqm_data <- data.frame(  
  disease = sample(factor(c("RA", "axSpA", "PsA"),  
                          levels = c("RA", "axSpA", "PsA")),  
                  size = 100,  
                  replace = TRUE,  
                  prob = c(0.5, 0.3, 0.2)),  
  gender = factor(sample(x = c("m", "f"),  
                        size = 100, replace = TRUE),  
                  levels = c("m", "f")),  
  inclusion_date = as.Date(seq(from = as.Date("2000-01-01"),  
                              to = Sys.Date(),  
                              length.out = 100))  
)  
summary(scqm_data)
```

```
##   disease  gender inclusion_date  
## RA      :47   m:55   Min.      :2000-01-01  
## axSpA:36   f:45   1st Qu.:2005-09-22  
## PsA    :17           Median :2011-06-15  
##           Mean    :2011-06-15  
##           3rd Qu.:2017-03-06  
##           Max.    :2022-11-27
```

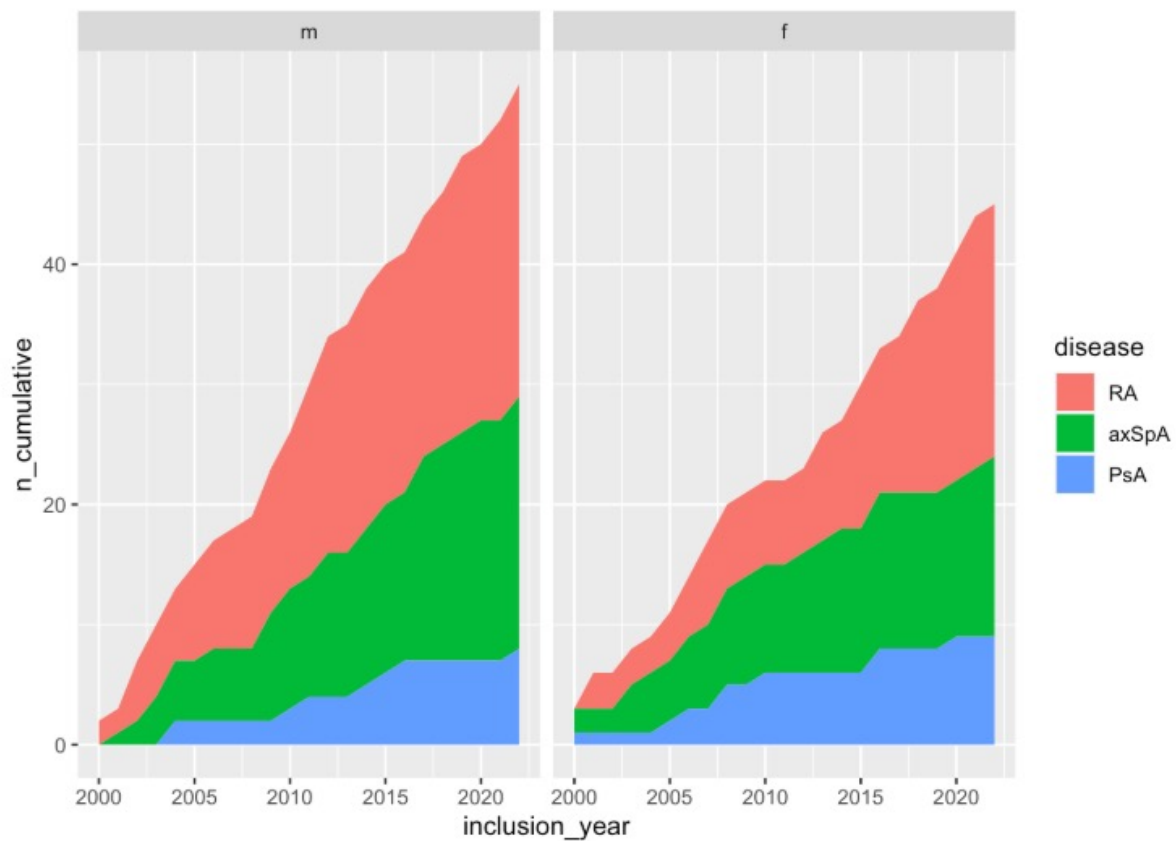
AGGREGATING DATA: NUMBER OF INCLUSIONS PER YEAR

```
# the summarised data set for the plot
dat_sum <- scqm_data %>%
  mutate(inclusion_year = floor_date(ymd(inclusion_date), unit = "year")) %>%
  group_by(inclusion_year, disease, gender) %>%
  summarise(n = n(), .groups = "drop") %>%
  complete(inclusion_year, disease, gender, fill=list(n=0)) %>%
  arrange(disease, inclusion_year, gender) %>%
  group_by(disease, gender) %>%
  mutate(n_cumulative = cumsum(n)) %>%
  as.data.frame()
str(dat_sum)
```

```
## 'data.frame':   138 obs. of  5 variables:
## $ inclusion_year: Date, format: "2000-01-01" "2000-01-01" ...
## $ disease       : Factor w/ 3 levels "RA","axSpA","PsA": 1 1 1 1 1 1 1 1 1 1 ...
## $ gender        : Factor w/ 2 levels "m","f": 1 2 1 2 1 2 1 2 1 2 ...
## $ n             : int  2 0 0 3 3 0 1 0 0 0 ...
## $ n_cumulative  : int  2 0 2 3 5 3 6 3 6 3 ...
```

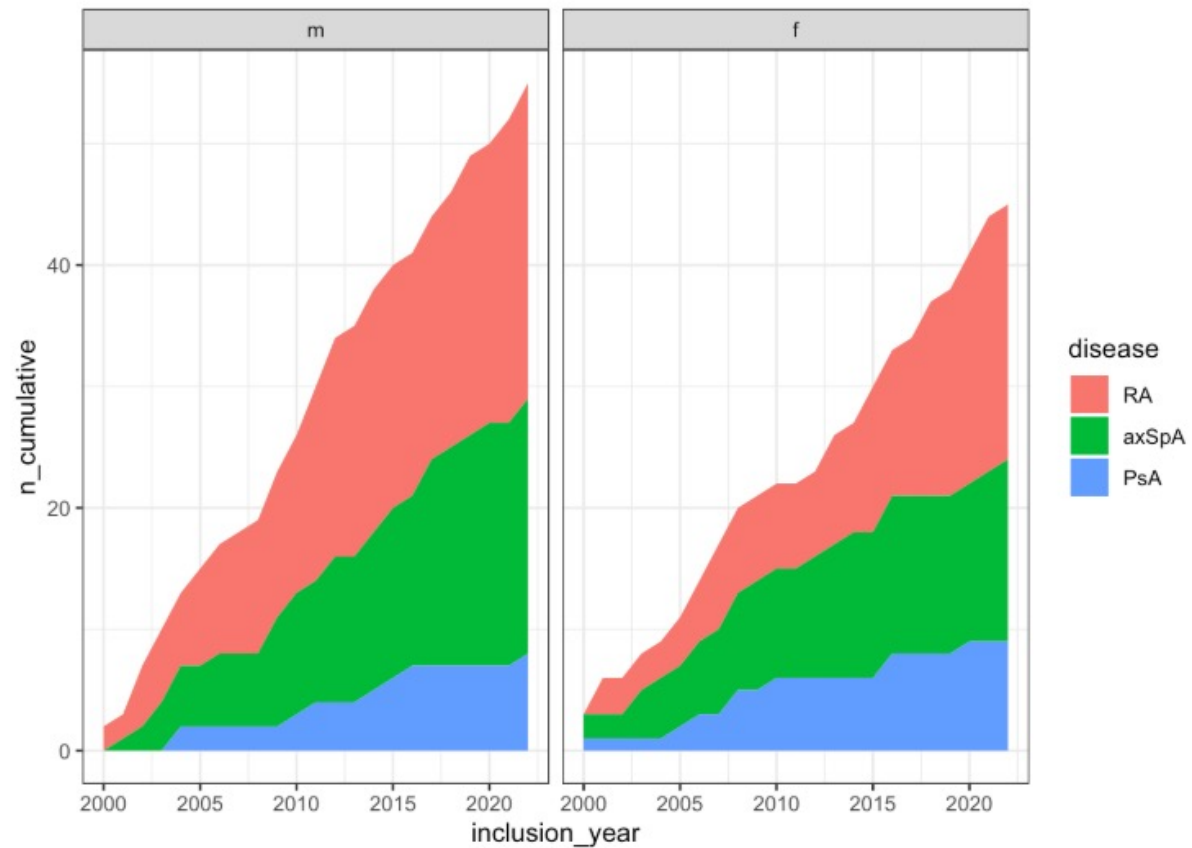
GGPLOT DEFAULT

```
p <- ggplot(dat_sum, aes(x = inclusion_year, y = n_cumulative, fill = disease)) +  
  geom_area(stat = "identity") +  
  facet_wrap(~gender)  
p
```



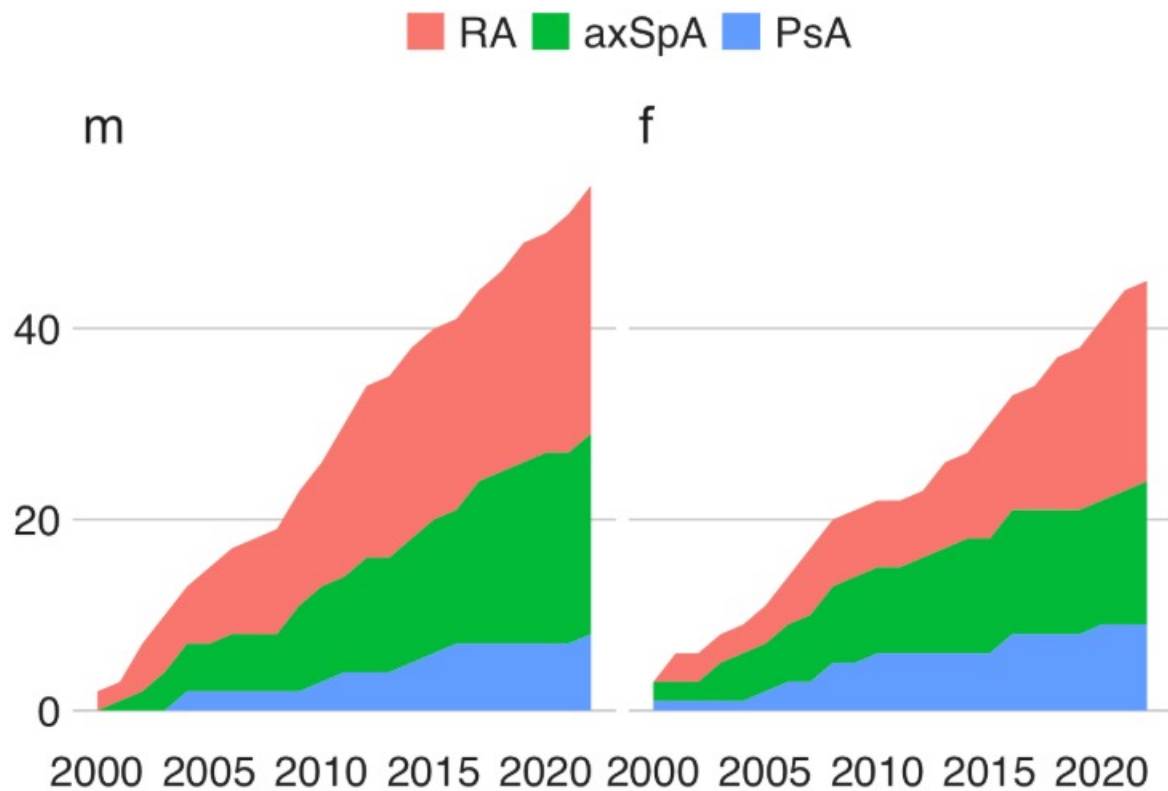
OTHER GGPLOT BUILT IN THEMES

```
p + theme_bw()
```



CUSTOM GGPLOT THEME FROM BBC

```
source("bbc_style.R")  
p + bbc_style()
```



SCQM THEME

```
## The SCQM theme
##
## This function allows you to add the scqm theme to your ggplot graphics.
## @import ggplot2
## @param alignment alignment of text (in [0, 1]). see [ggplot2::element_text()]
## @export
## @examples

theme_scqm <- function(font = "Helvetica",      # as defined by SCQM CICD
                       text_color = "#000000", # black as defined by SCQM CICD
                       grid_color = "#c9c9c9", # light grey as defined by SCQM CICD
                       alignment = 0.5) {

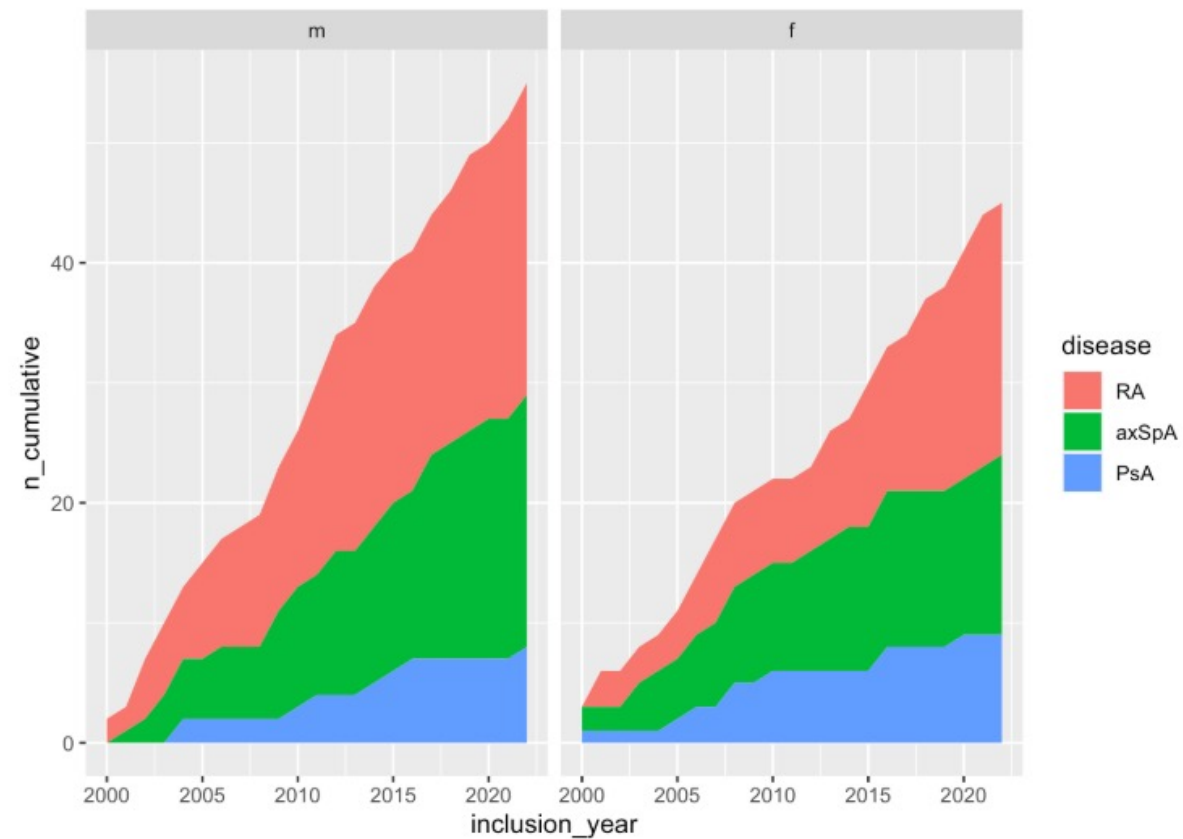
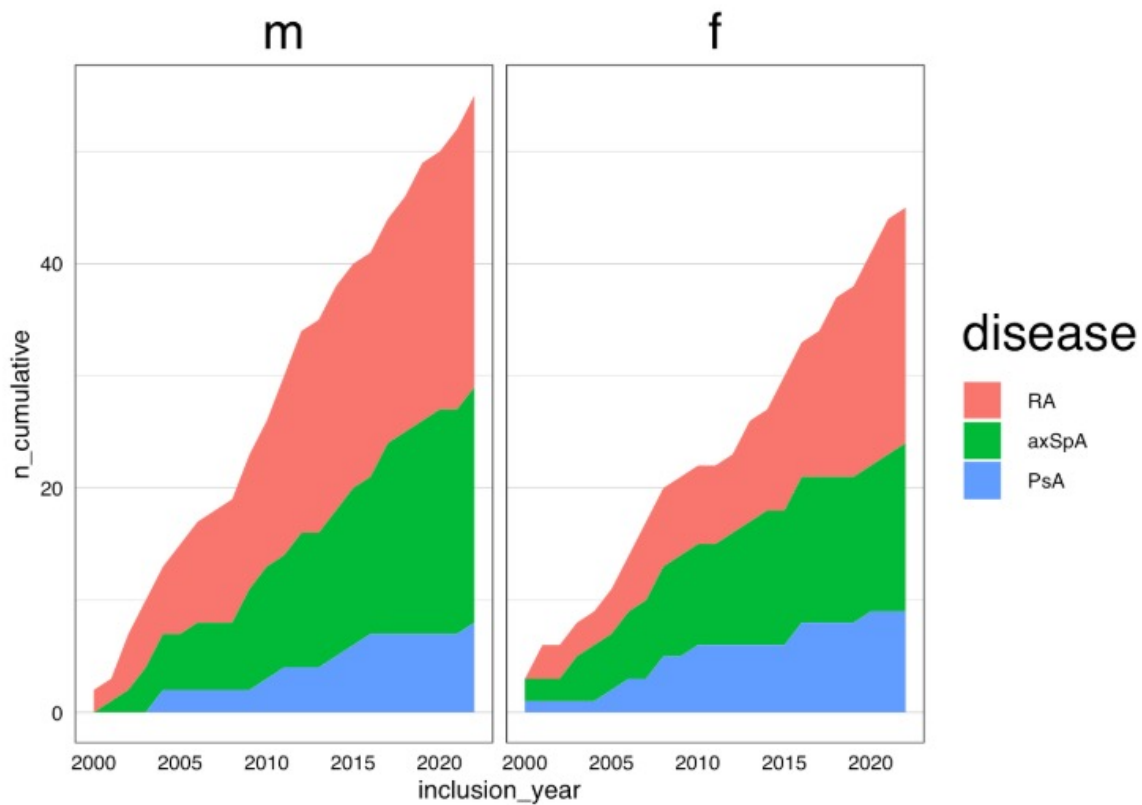
  # =====
  # the theme is based on the ggplot theme 'black white'
  ggplot2::theme_bw() +

  theme(
    # text style -----
    text = element_text(family = font, colour = text_color, hjust = alignment),
```

and so on....

SCQM GGPLOT THEME

```
source("theme_scqm.R")  
p + theme_scqm()
```





CODE-ALONG EXAMPLE: SCQM COLOR PALETTE

→ download the files from https://github.com/rladies-zurich/ggplot_theme and code along!



BLOG POST ON COLOR PALETTES

Creating Custom Color Palettes with ggplot2

By Meghan Hall in [R ggplot2 data viz](#)

OCTOBER 13, 2022

<https://meghan.rbind.io/blog/2022-10-11-creating-custom-color-palettes-with-ggplot2/>

BLOG POST ON COLOR ACCESSIBILITY

Styling {ggplot2} graphics for accessibility

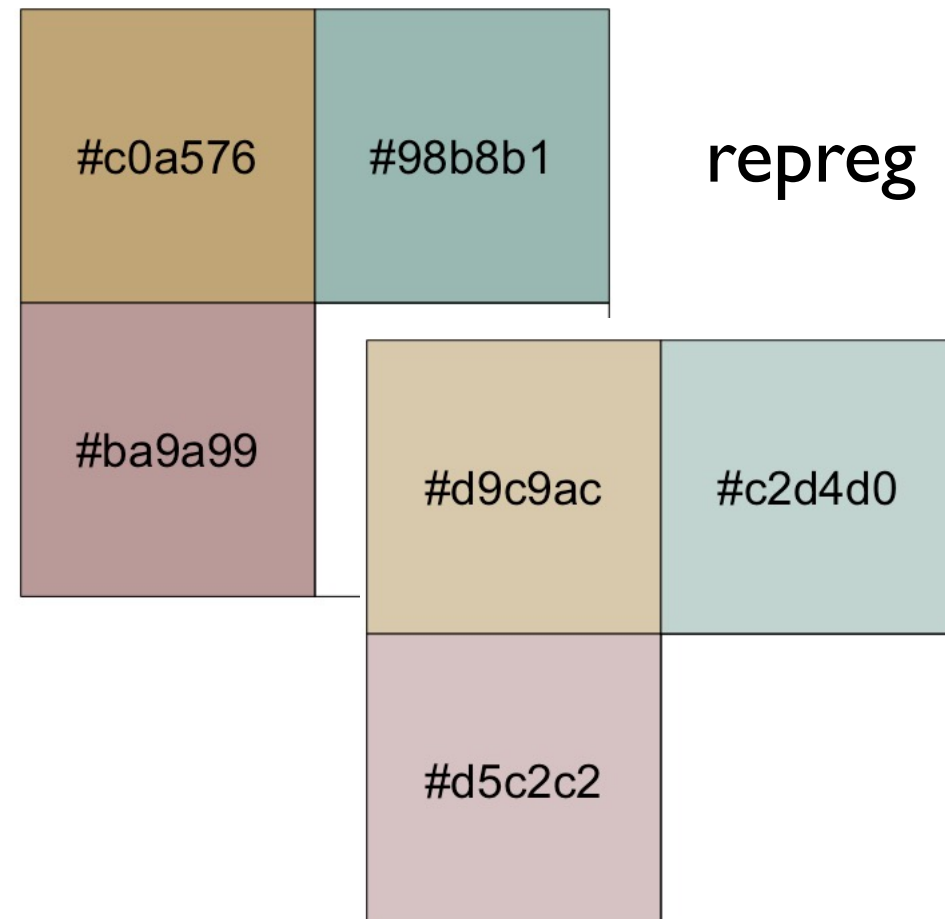
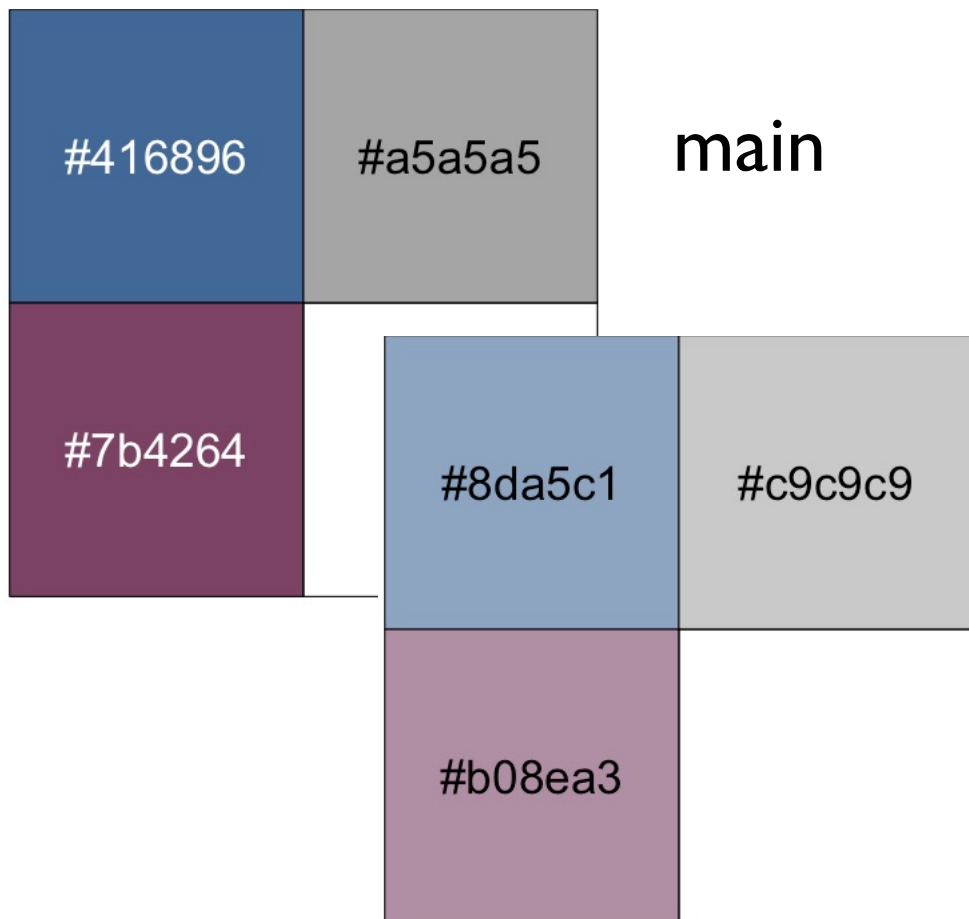
Nicola Rennie

R-Ladies London



<https://nrennie.rbind.io/talks/2022-october-rladies-london/slides.html#/title-slide>

SCQM COLOR PALETTES

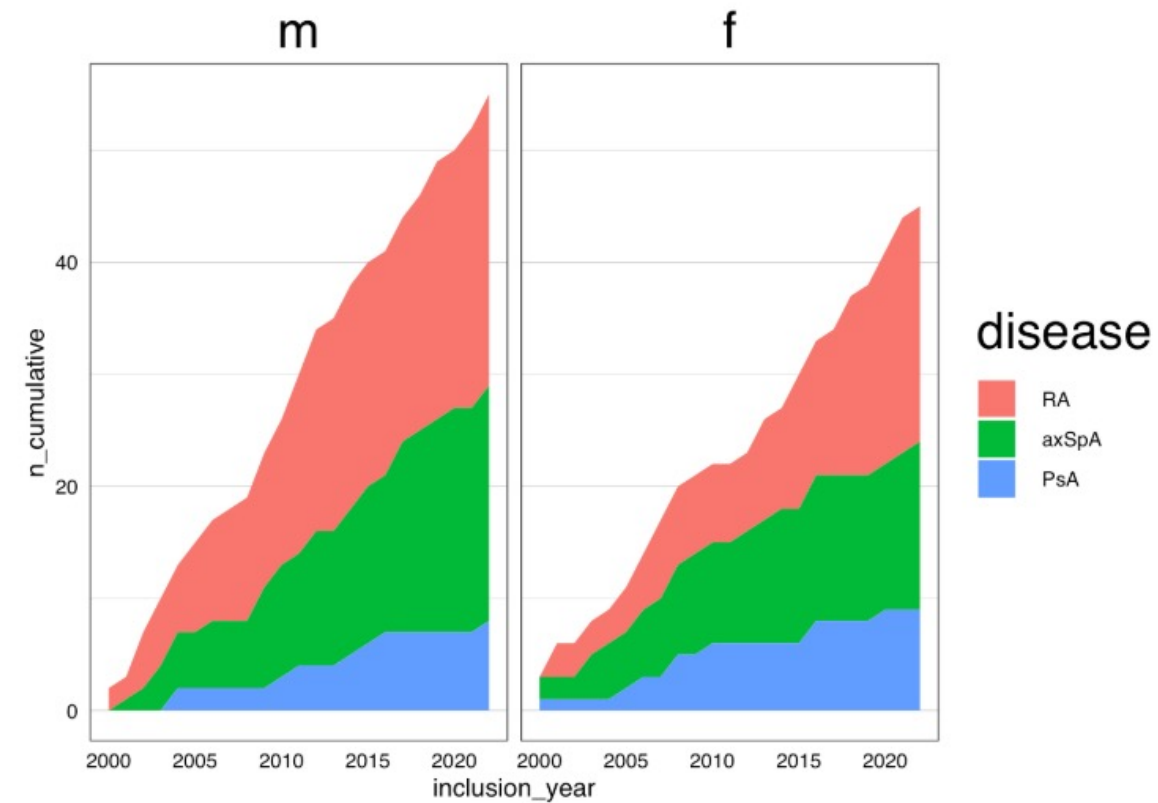
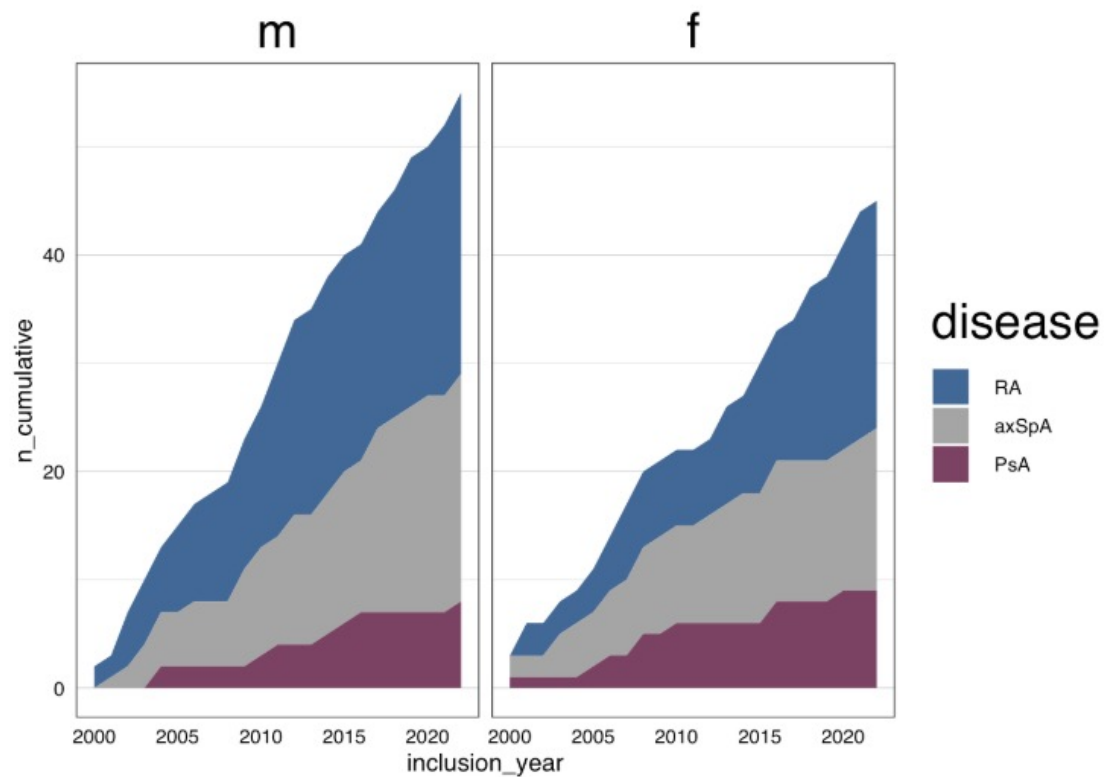


CUSTOM SCALE FILL FUNCTION

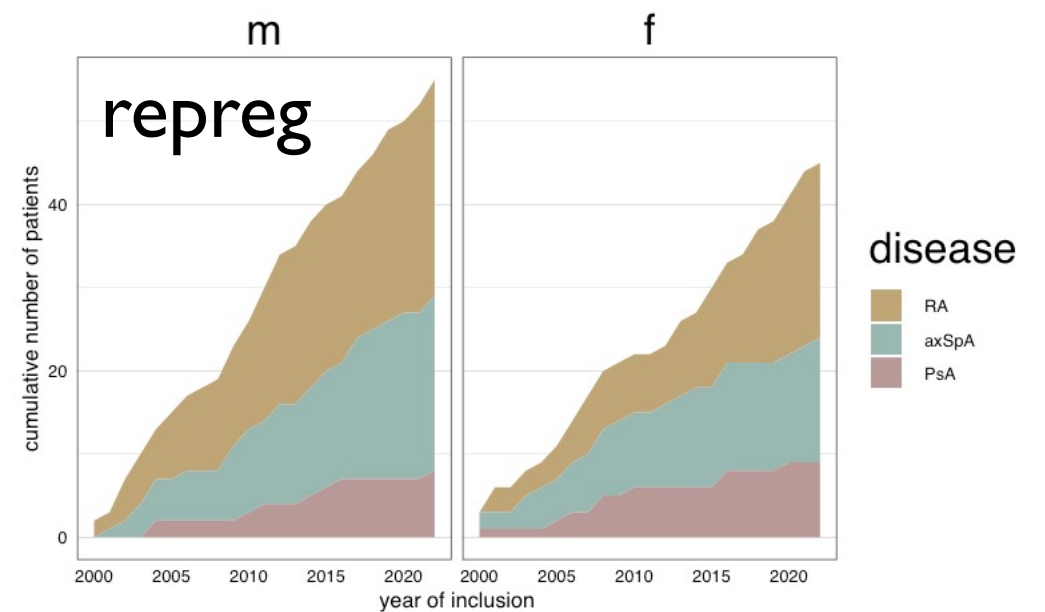
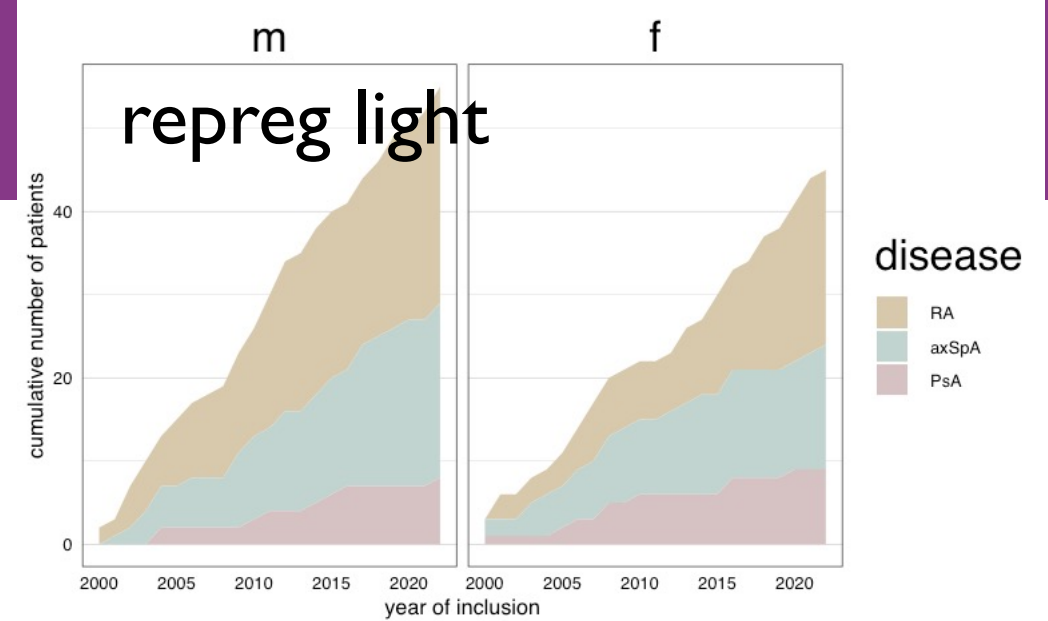
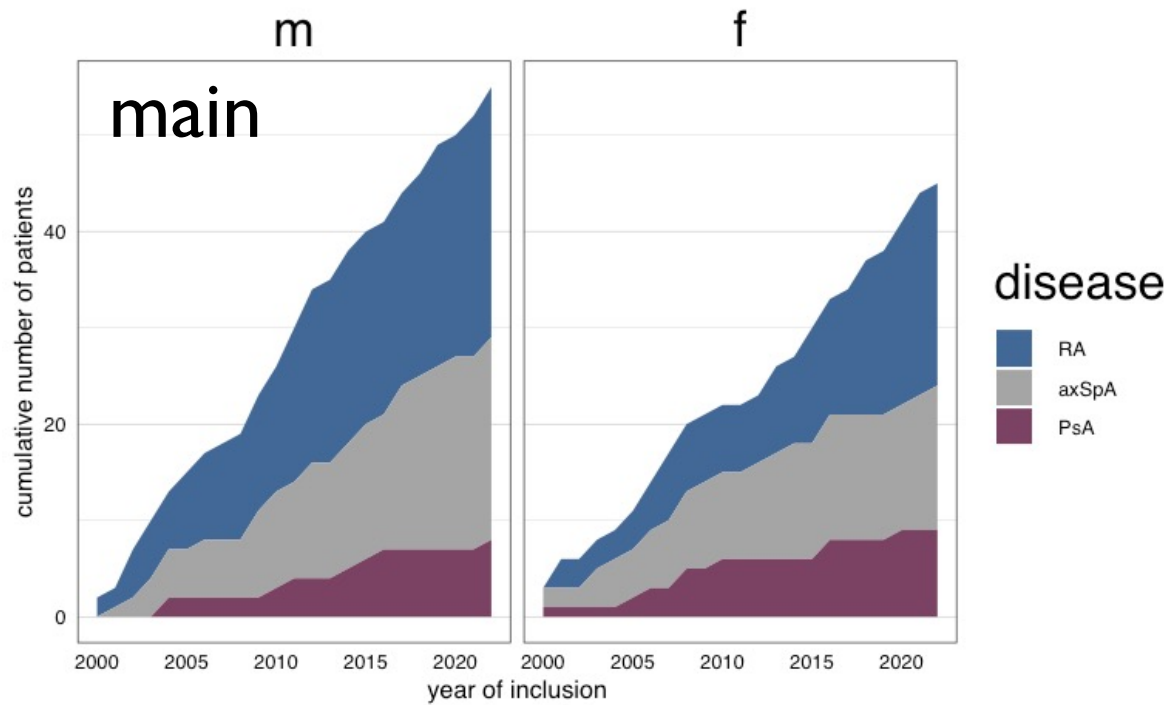
```
scale_fill_scqm <- function(palette = "main", direction = 1, ...) {  
  
  ggplot2::discrete_scale(  
    "fill", "scqm",  
    palette_gen(palette, direction),  
    ...  
  )  
}
```


SCQM COLOR SCHEME

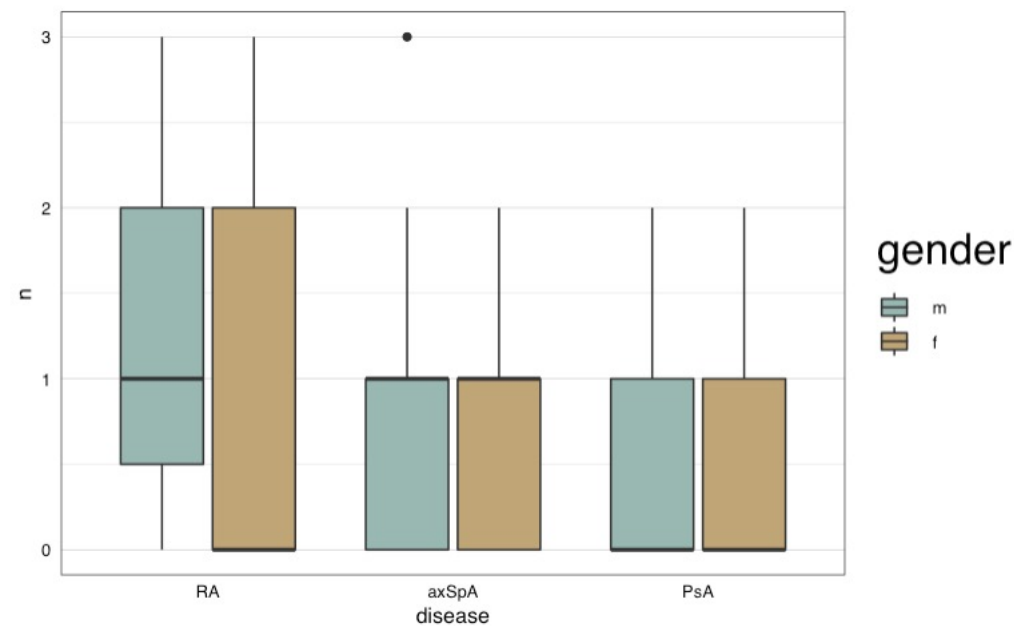
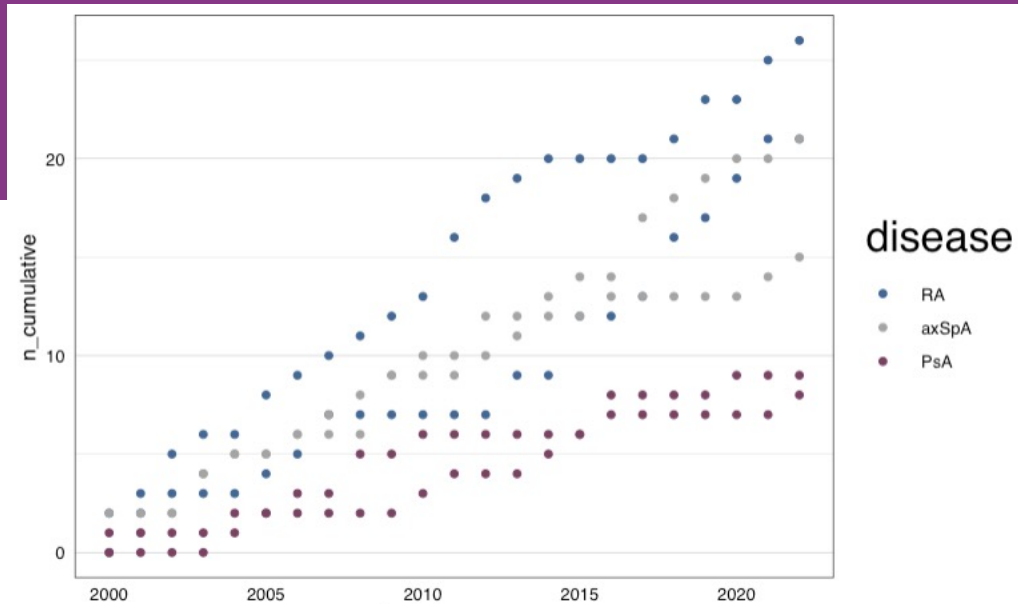
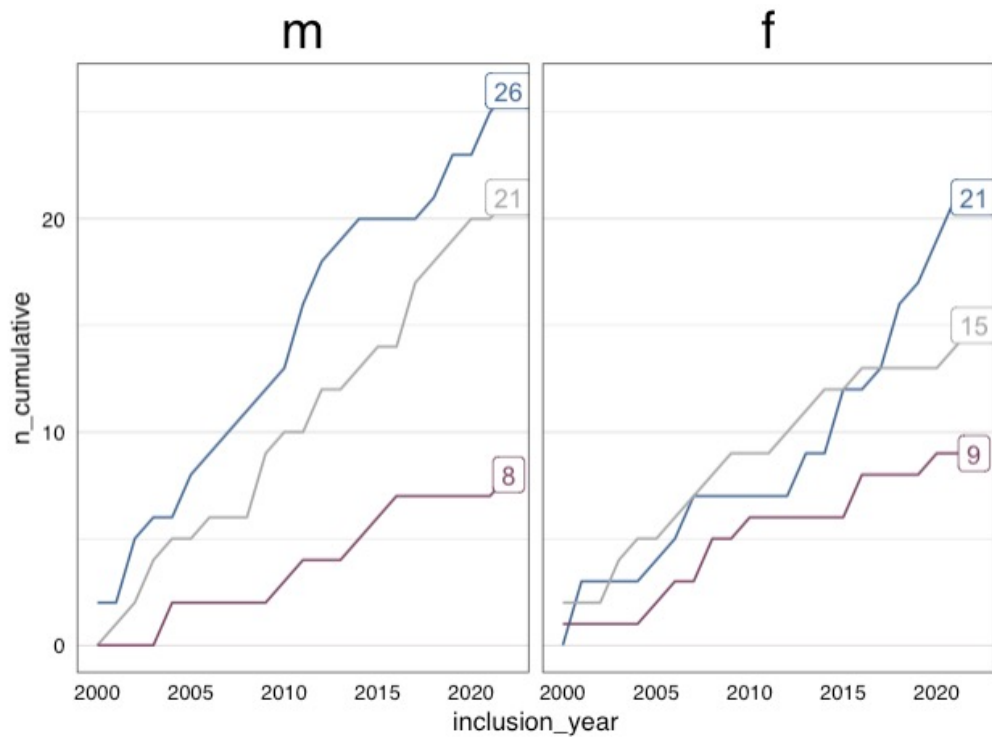
```
# with main palette  
p +  
  theme_scqm() +  
  scale_fill_scqm()
```



OTHER PALETTES



OTHER PLOT TYPES



WHERE DO I PUT THE .R FILE?

Macintosh HD > Users > seraphinakissling > Repositories > personalized_ggplot_theme



theme_scqm.R

In any project within folder 'Repositories':

```
source('../theme_scqm.R')
```

WHERE DO I PUT THE .R FILE?

advanced: in your own R package!

In any project, anyone in your company:

```
library(scqm.dev)
```



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Questions?

→ write me on MeetUp or LinkedIn!