U3\_BF\_Enrichment.R

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library(tidyverse)

## -- Attaching packages ------------------------------ tidyverse 1.2.1 --

## v ggplot2 3.0.0 v purrr 0.2.5  
## v tibble 1.4.2 v dplyr 0.7.6  
## v tidyr 0.8.1 v stringr 1.3.1  
## v readr 1.1.1 v forcats 0.3.0

## -- Conflicts --------------------------------- tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

library(gplots)

##   
## Attaching package: 'gplots'

## The following object is masked from 'package:stats':  
##   
## lowess

library(agricolae)  
library(janitor)  
library(car)

## Loading required package: carData

##   
## Attaching package: 'car'

## The following object is masked from 'package:dplyr':  
##   
## recode

## The following object is masked from 'package:purrr':  
##   
## some

cancer <- read\_csv("Cancer.csv")

## Parsed with column specification:  
## cols(  
## type = col\_character(),  
## gender = col\_integer(),  
## age = col\_integer(),  
## days = col\_integer()  
## )

cancer$type <- as.factor(cancer$type)  
cancer$gender <- as.factor(cancer$gender)  
  
singer <- read\_csv("singerheights.csv")

## Parsed with column specification:  
## cols(  
## height = col\_integer(),  
## gender = col\_character(),  
## part = col\_character()  
## )

singer$gender <- as.factor(singer$gender)  
singer$part <- as.factor(singer$part)  
  
cancer\_anova <- aov(age~type\*gender, data = cancer)  
anova(cancer\_anova)

## Analysis of Variance Table  
##   
## Response: age  
## Df Sum Sq Mean Sq F value Pr(>F)  
## type 5 399.8 79.961 0.6629 0.6532  
## gender 1 50.9 50.877 0.4218 0.5190  
## type:gender 5 584.1 116.825 0.9685 0.4459  
## Residuals 51 6151.8 120.623

cancer\_anova1 <- aov(age~type\*gender, data = cancer, contrasts = list(type = contr.sum, gender = contr.sum))  
Anova(cancer\_anova, type = 3)

## Anova Table (Type III tests)  
##   
## Response: age  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 9384.5 1 77.7999 7.771e-12 \*\*\*  
## type 469.0 5 0.7776 0.5705   
## gender 24.3 1 0.2015 0.6555   
## type:gender 584.1 5 0.9685 0.4459   
## Residuals 6151.8 51   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

singer\_anova <- aov(height~gender\*part, data = singer)  
anova(singer\_anova)

## Analysis of Variance Table  
##   
## Response: height  
## Df Sum Sq Mean Sq F value Pr(>F)   
## gender 1 1018.86 1018.86 161.1262 < 2e-16 \*\*\*  
## part 1 33.09 33.09 5.2329 0.02383 \*   
## gender:part 1 6.58 6.58 1.0413 0.30948   
## Residuals 126 796.74 6.32   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

singer\_anova1 <- aov(height~part\*gender, data = singer, contrasts = list(part = contr.sum, gender = contr.sum))  
Anova(singer\_anova1, type = 3)

## Anova Table (Type III tests)  
##   
## Response: height  
## Sum Sq Df F value Pr(>F)   
## (Intercept) 548245 1 86701.8490 <2e-16 \*\*\*  
## part 37 1 5.8184 0.0173 \*   
## gender 873 1 138.0042 <2e-16 \*\*\*  
## part:gender 7 1 1.0413 0.3095   
## Residuals 797 126   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1