Record Keeping in Computing

Colorado State University

PLOS | COMPUTATIONAL BIOLOGY

Good enough practices in scientific computing

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http://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1005510

Record Keeping in Computing

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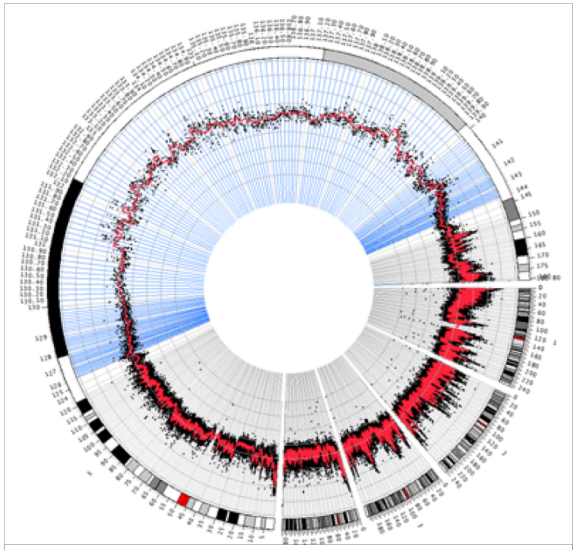
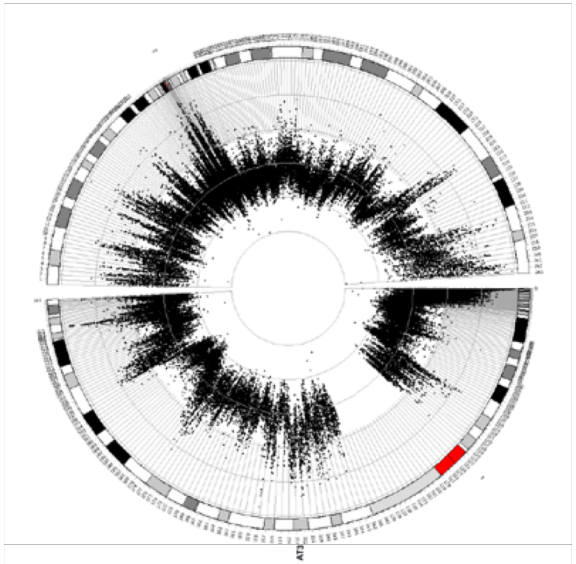
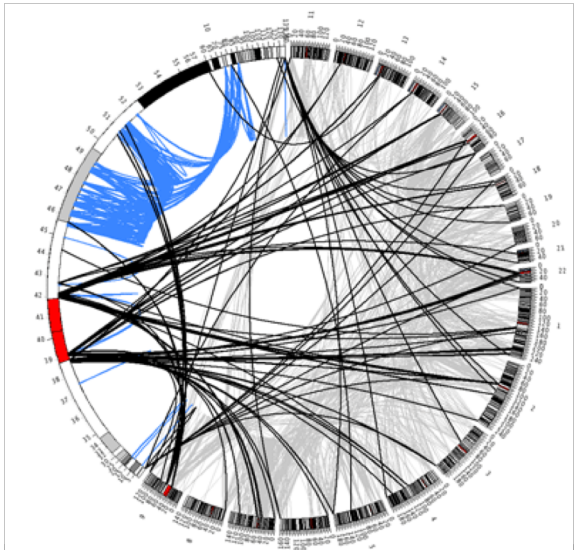
Introduction to R and R Markdown

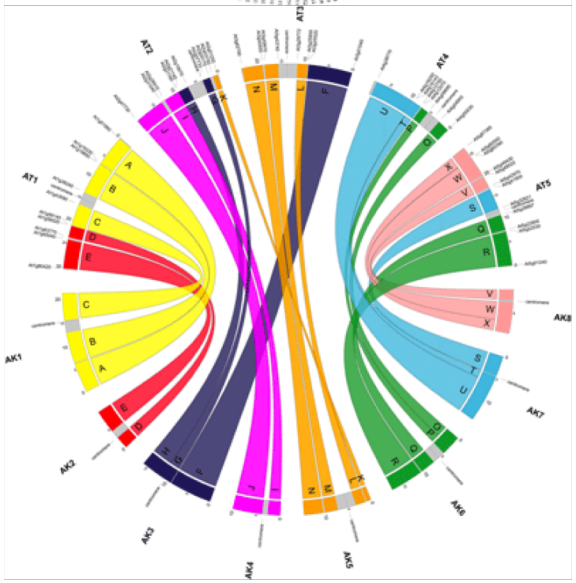
https://dbsloan.github.io/TS2019/exercises/r_markdown.html

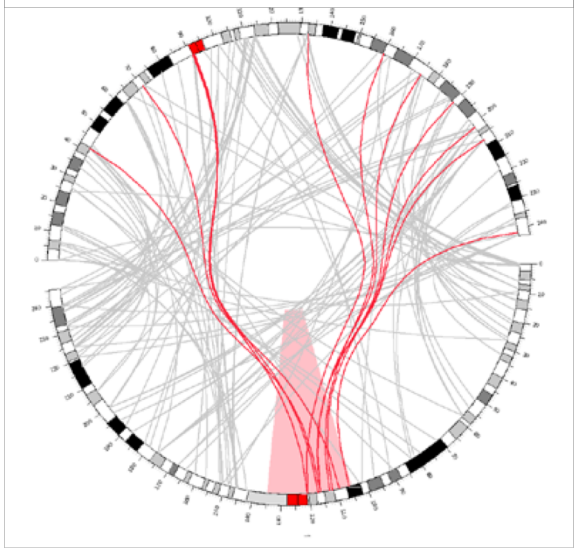
Data Visualization





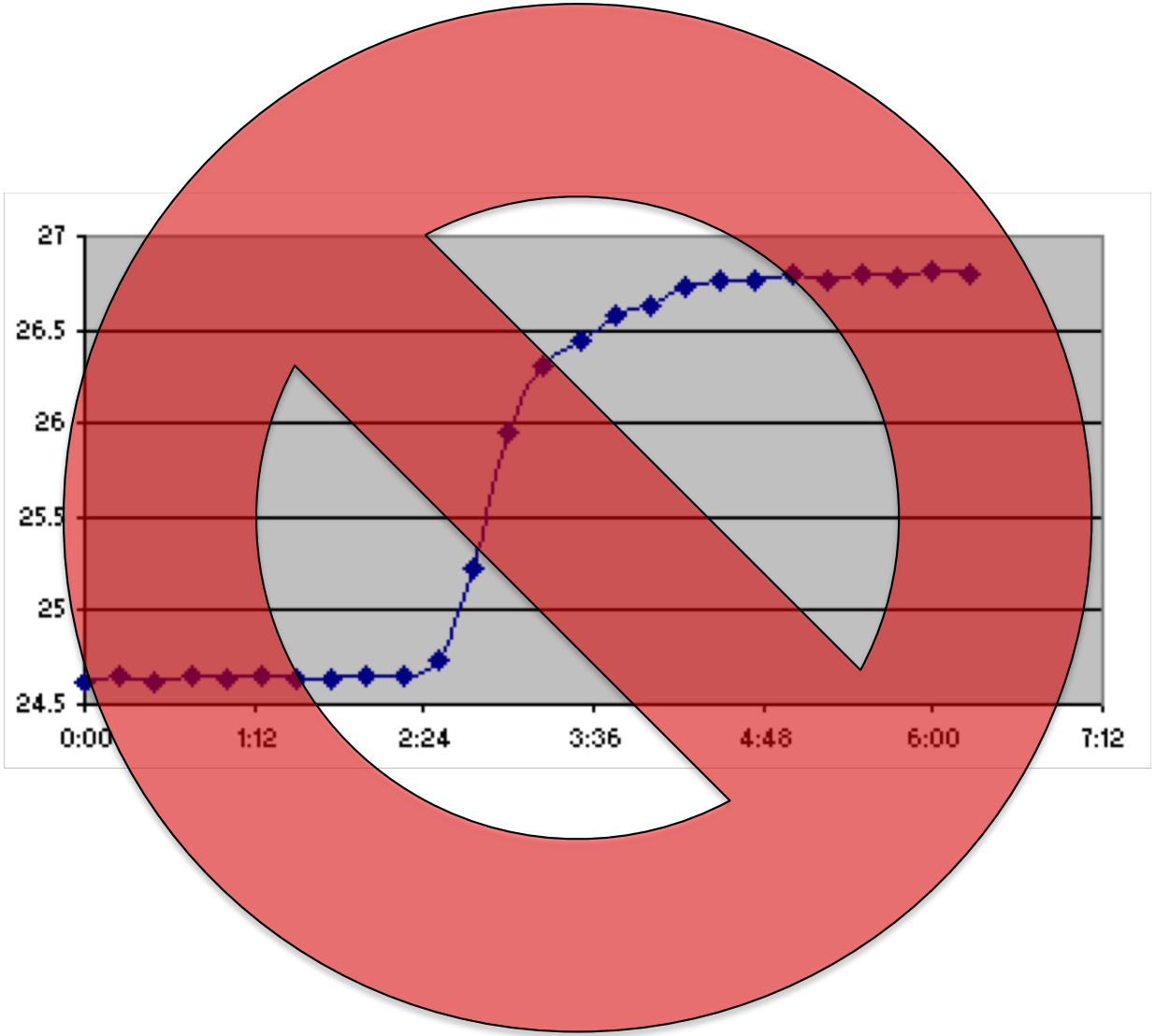






Images: Circos.ca

Data Visualization



Data Visualization

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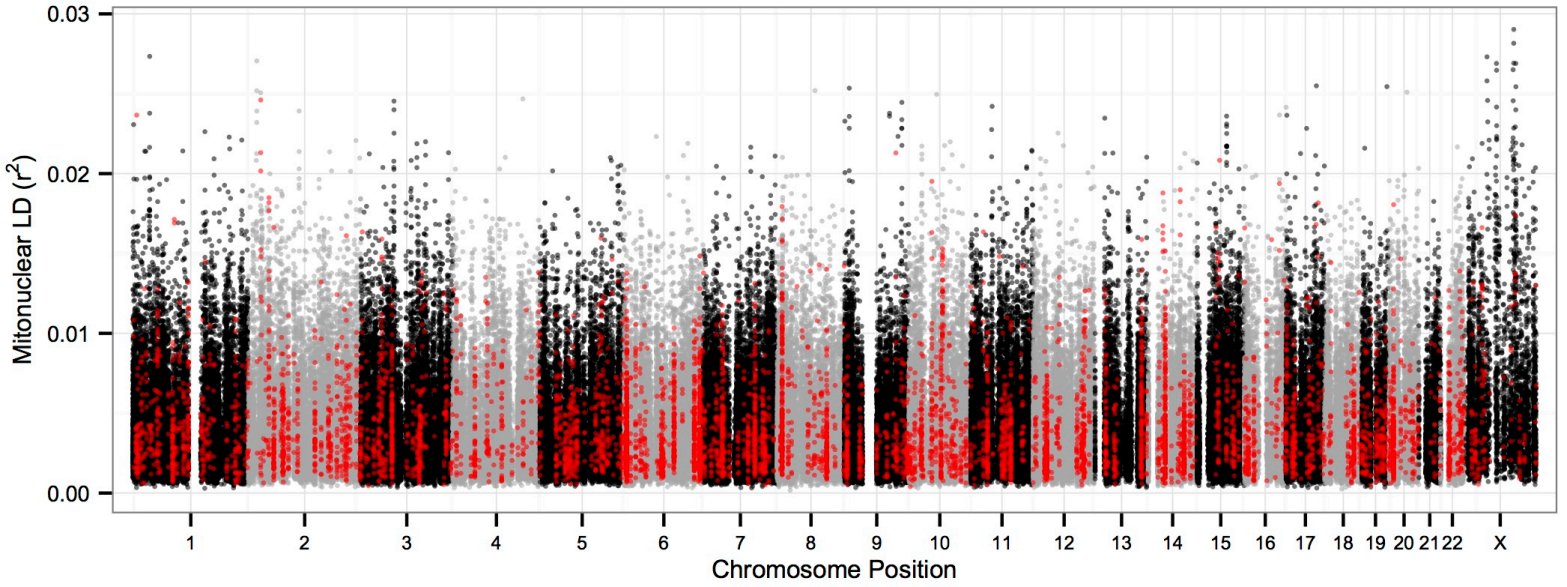
Quality Figures for Papers and Presentations

- Clear and accurate representation of your data
- Clean, professional, and aesthetically pleasing appearance
- Efficient, reproducible, and automated

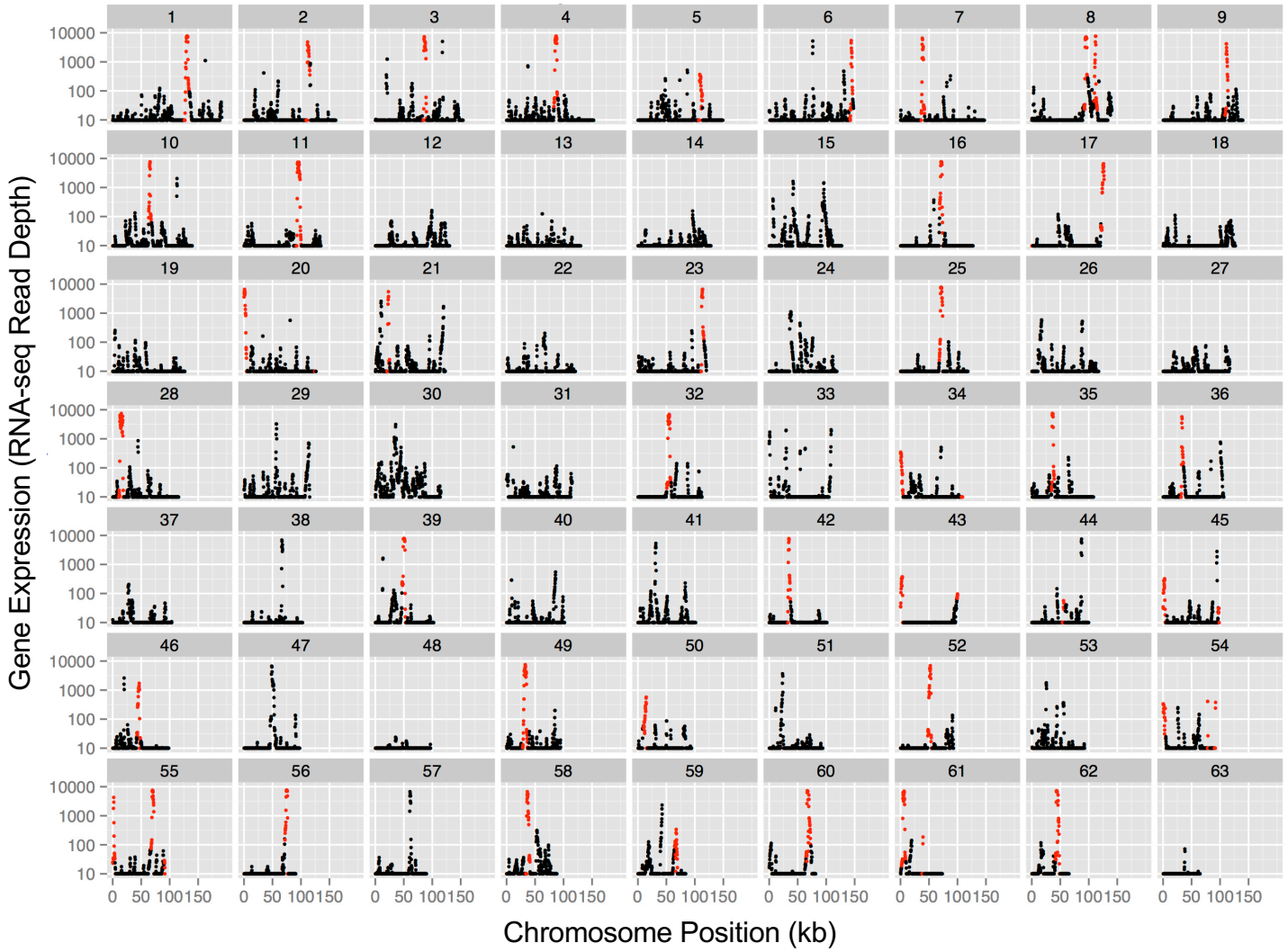
Data Visualization

Writing Code to Generate Figures

```
ggplot(cnld) + geom_point(aes(x=CumPos, y=r2, size=0.75, colour=as.factor(ChromPrint),
alpha = 1/8)) + scale_size_identity() + theme_bw(base_size=15) +
scale_color_manual(values=c(rep(c('black', 'dark gray'),11), 'black', 'red')) +
scale_x_continuous(expand = c(0.015, 0.015),labels=c(as.character(1:chrNum), "X"),
breaks=bpMidVec) + theme(plot.margin = unit( c(0.03,0.03,0.03,0.03) , "in" ),
legend.position='none', axis.text.x = element_text(size=6), axis.text.y =
element_text(size=7), axis.title.x = element_text(size=8), axis.title.y =
element_text(size=8)) + xlab('Chromosome Position') +
ylab(expression(paste("Mitonuclear LD (",r^2, ")")))
```



Data Visualization



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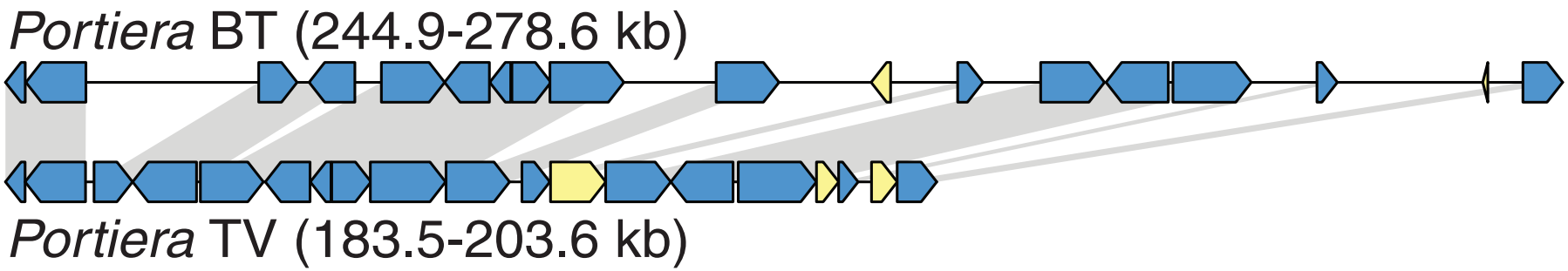
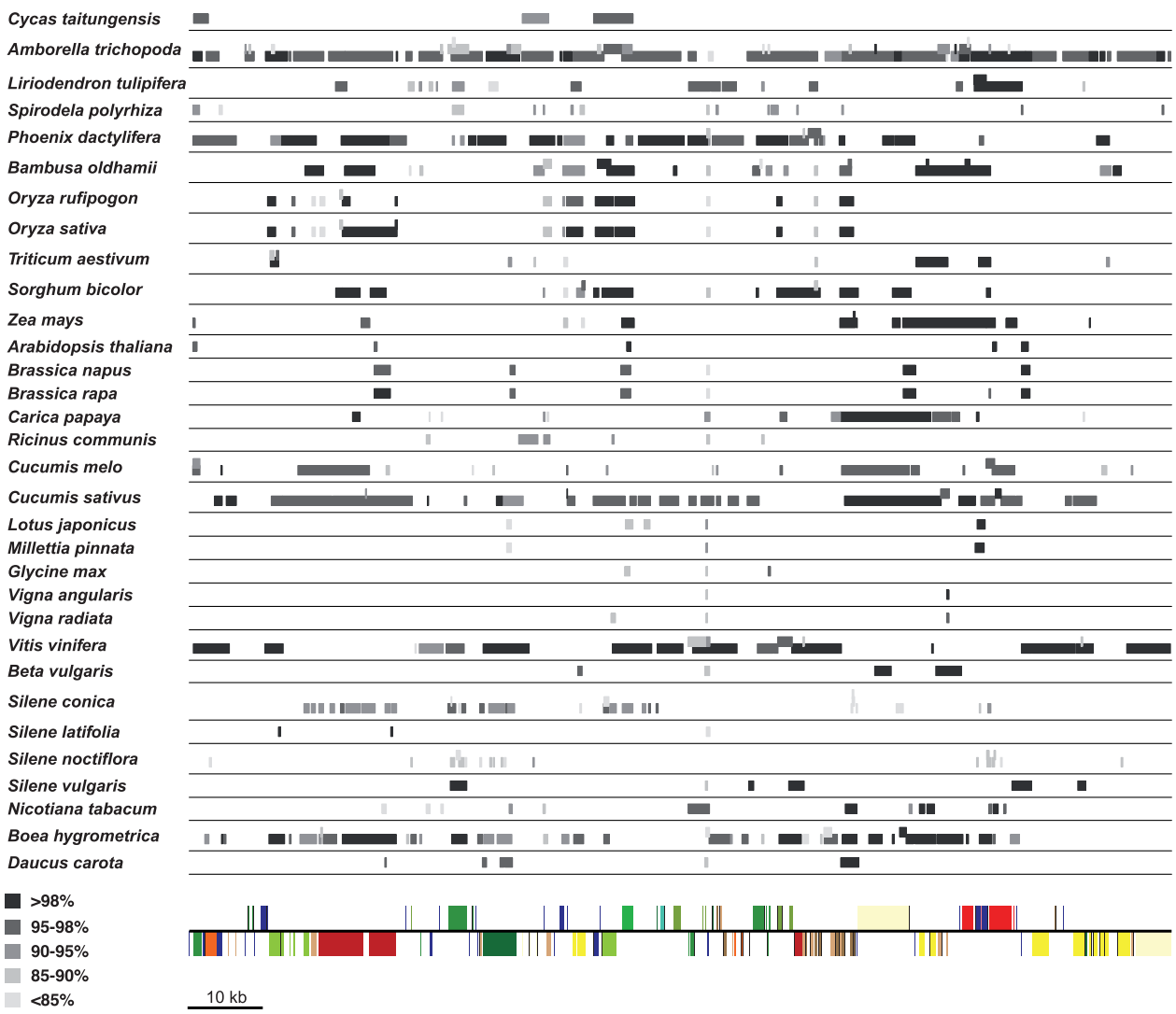
Plotting Genomic Data with R and ggplot

https://dbsloan.github.io/TS2019/exercises/ggplot.html

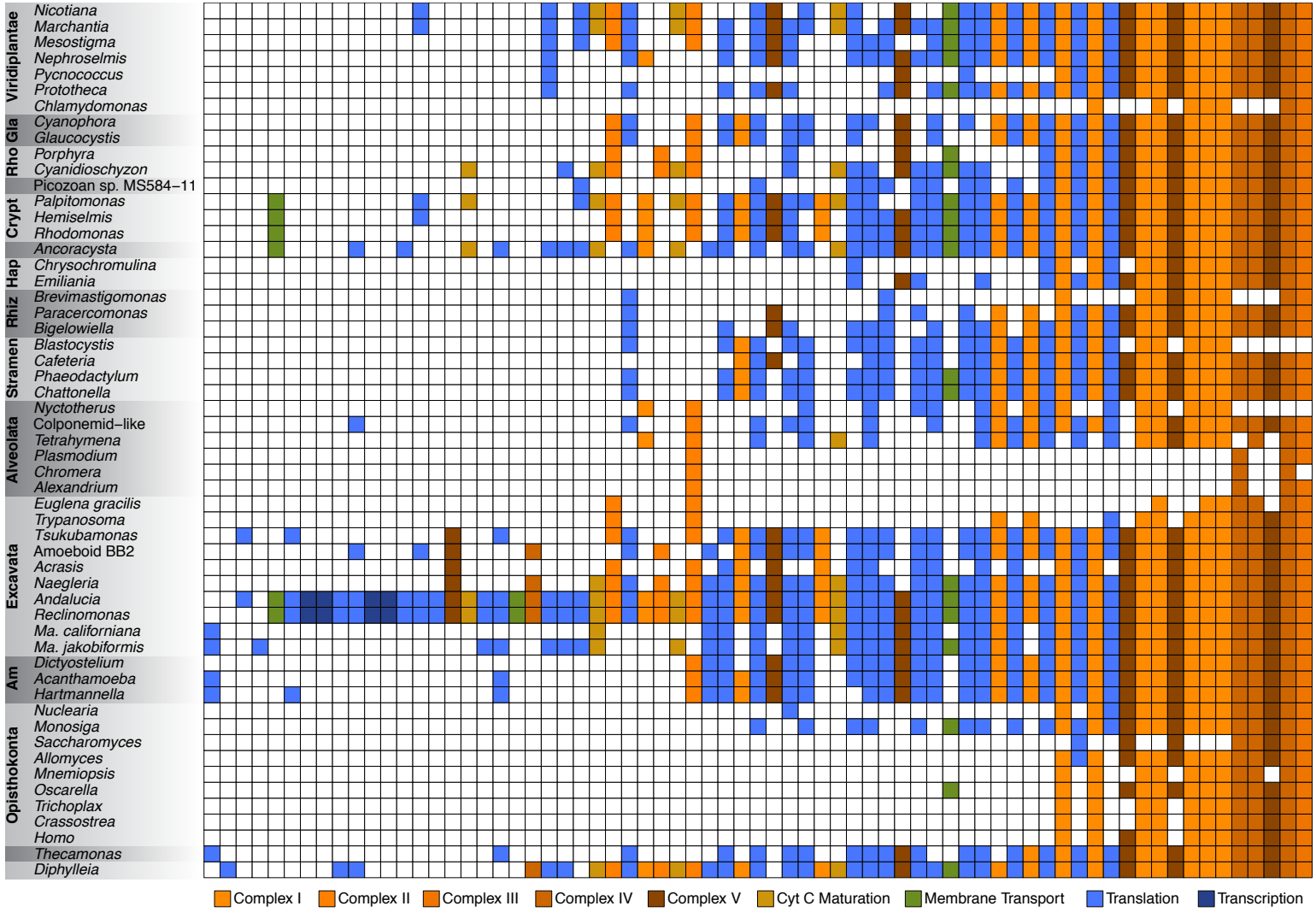
Data Visualization



Data Visualization



Data Visualization



Data Visualization

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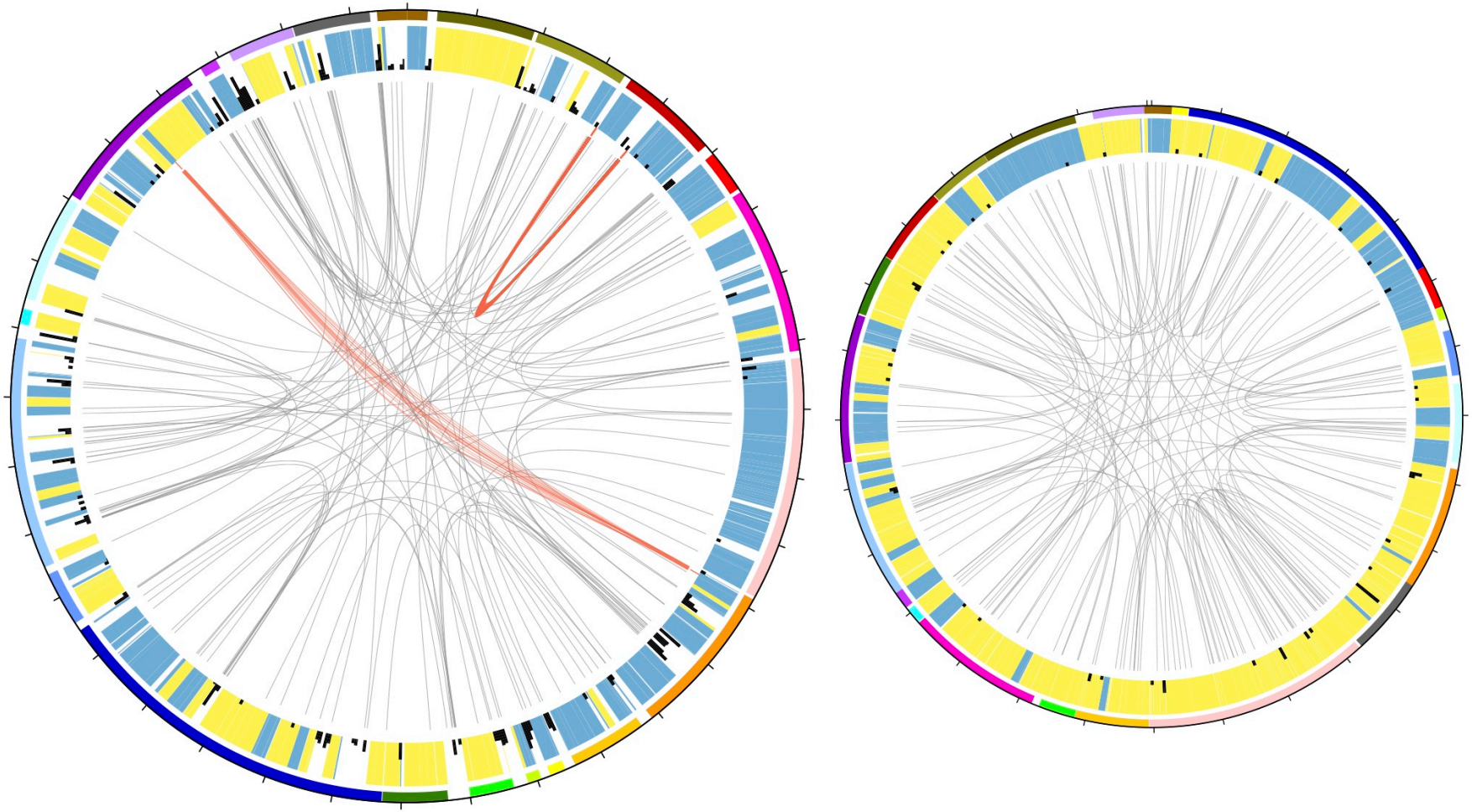
Figure Drawing in R

https://dbsloan.github.io/TS2019/exercises/r_figure_drawing.html

Data Visualization



Data Visualization

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Visualizing Genomic Data with Circos

https://dbsloan.github.io/TS2019/exercises/circos.html