Chairs: Dr. Shahram Kordasti (King’s College London, UK), Dr. Duncan Murray (University Hospitals Coventry and Warwickshire, UK), Dr. Jonathan Irish (Vanderbilt University, USA)

------------ =================== Part 1 =================== ------------

2:00 - 2:15 Welcome and Introduction, Goals of the Workshop (Kordasti)

2:15 - 2:30 Introduction to RStudio and R (Irish)

Everyone download and start installing code

<https://github.com/JonathanIrish/datasci_london>

2:30 - 2:45 Data Science Overview, discussion of tools (Irish)

t-SNE, UMAP, FlowSOM, SPADE, Phenograph, dbscan, MEM, etc.

2:45 - 3:00 Introduce the science for Irish examples covered in Part 2 (Irish)

Human patient cGVHD phenotypes from Gandelman et al., *Haematologica* 2018

Human blood cell CyTOF phenotypes from Diggins et al., *Nature Methods* 2017

Human macrophage polarization phenotypes from Roussel et al., *JLB* 2017, *MiMB* 2019

3:00 - 3:15 Introduce the science for Murray example covered in Part 2 (Murray)

List reference for Murray example(s)

3:15 - 3:30 Introduce the science for Kordasti example covered in Part 2 (Kordasti)

List reference for Kordasti example(s)

------------ =================== Break =================== ------------

3:30 – 4:00 Coffee Break

------------ =================== Part 2 =================== ------------

4:00 – 4:15 Presentation from Cytobank / Beckman Coulter

4:15 – 4:45 Q & A on data science, tools, examples, and installing (All, including Cytobank)

As needed, get everyone caught up on tools.

4:45 – 5:15 Hands on data analysis: R walkthrough for Irish example datasets (Irish)

5:15 – 5:30 Hands on data analysis: Data analysis examples (Kordasti)

5:30 – 5:45 Hands on data analysis: Data analysis examples (Murray)

5:45 – 6:00 Conclusion and final words, final questions, buffer (All)