# Djordjevic Genomics Lab Meeting

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| **When?** | 10:00-11:00, Monday 14 May 2024 |
| **Where?** | CB.04.07.540 |
| **Invitees?** | Steven Djordjevic (SD), Max Cummins (MC), Veronica Jarocki (JC), Dmitriy Li (DL), Ethan Wyrsch (EW), Ola Stanczak (OS) |
| **Apologies/Absent:** | Sopheak Hem (SH), Zain Ul Abedien (ZUA), Barbara Brito Rodriguez (BBR) |

## Notes:

MC:

* AusTrakka demo last week
* Max has a talk this Thursday at 2pm on Plasmid Data
  + Is Steve ok with me speaking to plasmid data
  + Make a note that its confidentiality
    - Max to message Ange and confirm
    - Do we need to notify working group etc
* Error in APG manuscripts
  + Story remains the same
  + Every data point and figure needs to be regenerated
  + Metadata obscured duplication of
    - ~100 Touchon genomes
    - ~30 AusGEM genomes
  + Manuscript 1 nearly fully cleaned
    - 15 hours of work on the weekend
  + Manuscript 2 being processed
* Met with Cam last week to discuss manuscript 2
  + Now implementing a ML tool to perform plasmid clustering

SD:

* VJ, EW and DL went to demonstration WWTP last week
  + There for the most part of the day
  + Discussions on JPI-AMR program
  + Sandra Martin in contact with Steve to finalise contract
  + Sampling regime discussed
    - Three sites putatively identified
      * Shell Harbour
        + Tertiary treatment
        + Preferred site
        + Probably cleaner
        + Microbiology centralised at West Rhyde
        + Chlorine and UV treatment
      * Malabar
        + Drains to ocean after primary treatment
        + Probably dirtier
      * Ocean something (?)
    - Will learn which hospitals feed into these sites
      * Barbara Drigo does a lot of mapping work so would be helpful
  + Discussed PhD program
* Been looking at Ola’s data
  + From diseased calves
    - ETEC cause disease in cattle?
  + High HPI prevalence (~30%)
  + Top 4 STs
    - 10
    - 155
    - 58
    - 69
  + ColV carriage is low
  + senB is low
  + Heavy CTX-M carriage
    - Even among non-selected?
  + Heavy AMR
  + 3 isolates an animal for unselected (resistance) strains
  + Max – Suggested to keep an eye out for F13:A-:B-
    - Common in bovine ST95
  + Remaining work
    - Class 1 integrons
    - Plasmid IncF RST
    - Max suggests MOBsuite

VJ:

* Worked on Dairy Effluent
  + Now calling it Dairy Wastewater
  + Washed floors – is untreated
  + Finished phylogeny and AMR
  + Now working on Virulence
    - Some ETEC
  + ST3268 section will be quite lengthy
* This week project impact plan is a priority for vaccine work
  + Due on 17th
  + Daniel (?) to submit
* Review comments returned for Microbiology Australia
  + MC and Celeste (UniMelb) and VJ to meet and discuss
* Meeting with Barbara at 11 with Ola

EW:

* To work on Steve’s slides
* Finishing up Fiji E. coli work
  + Figure 1
    - Tree with genotyping
  + Interesting dataset:
    - ST410 common feature
    - Many other interesting ExPEC lineages
      * Not particularly unique ExPEC epidemiology outside of ST410
  + Needs to run fastbaps
    - Must download all ST410s
  + Thinking for meeting on Wednesday to use enterobase data as a preliminary look
    - ~1.5k online
  + Interesting virulence profiles
    - Combined ColV and senB hits
  + 3-4 ST410s to be long read sequenced
    - Ethan sent Steve which isolates
      * 1 is an environmental variant that has lost genes
        + Interesting part of story
      * Others are highly resistant etc
    - May also sequence or request sequence from Doherty group
  + Figures to be shared next week
  + NDM-7 and NDM-5 genes
  + IPEC
    - 2 isolates carrying subAB
    - 2 with shigatoxin
    - One with both
    - Unnotable STs