1. Overview of COD training modules (1-2-3).


First training module (COD1): Reductionist discovery approach
3. Intro to the concept of "reductionist approach".

4. Example of the approach: "Candidate biomarker of tissue damage".

   --> Here come GXB: the user-friendly transcriptomic data browser. Watch GXB tutorial video (x2) and go-through screenshots.
   --> Hands-on (20-30 min): GXB [QUERY 01].


7. Explore the literature: "what is known about your gene and your selected subject matter/topic?" [QUERY 02].

8. KEY MESSAGE of COD1: What is a knowledge gap?

9. Introduce knowledge gap score (KGS) assessment.
   --> Calculate the KGS for the genes you identified in the previous exercise.

   Hands-on (30-45 min): Literature searches and KGS calculation.

    --> Possible to discuss short-list with instructors/mentor via email and/or Skype.

11. Proof of principles and steps towards publication of a Discovery Note.
    --> Circle 12 is meant to be explored on your own.

12. Independent validation.
    --> Hands-on (60 min): Validate the differential expression of your gene in 6 other relevant datasets; generate validation table as per “TEMPLATE Validation_Table.xlsx” [QUERY 03].

13:00

13. Interpretation of results.
    --> Hands-on (90 min + homework): Identify literature linking concepts associated with the candidate genes to those associated with the primary dataset [QUERY 04]; follow steps as per TEMPLATE Concept_Table.xlsx
    --> Follow up via emails and/or Skype.

14. Discuss next steps: writing.
    --> Follow up via emails and/or Skype.
DAY 2
March 6, 2019.
Duration: 9:00 am - 17:00
Attendants should bring a laptop and have access to internet and Prezi (see https://prezi.com/ and https://prezi.com/signup/basic/).

1. Con’t Interpretation of results
2. Embellish figures: R script, ppt, GraphPad Prism, etc...

Second training module COD Module 2: Creation of dataset collections.
1. Intro to concept of dataset collection.
   a. GEO2R long way around.
2. Proof of concept: example with recent SData manuscript.
3. Establishing an interesting collection.
4. Literature search and MeSH definition.
5. Explore what is known about the subject: knowledge assessment (find and read important reviews).
   --> Achieve outside workshop.
6. GEO browsing: investigate the availability of datasets for the specific subject.
   --> Hands-on (30 min):
7. KEY MESSAGE of COD2: Record and curate.
   a. Search strategy details: use NCBI to keep track of your searches.
   b. Traceable curation of your dataset list.
8. Inspect search result, curate, record, build table (i.e. become the main table of manuscript).
   --> Expected results: examples.
9. GXB creation (complex bioinformatics): requires IT support, internships, and/or remote assistance.
10. Demo: Uploading to GXB and annotating (straightforward once GXB in place).