

BIOTECHNET WORKSHOP

Introduction to transcriptomic analysis & functional interpretation



In collaboration with
BETin
BIO & EMERGING TECHNOLOGY INSTITUTE

25-26 August 2022
Addis Ababa & online



BiotechNet

Register Now

Registration & poster submission by August 16 at:
<https://forms.office.com/r/bRm4tgPZWp> or scan
the the QR code on your phone to access the
registration form.



Biotechnet Workshop

Introduction to transcriptomic analysis & functional interpretation

Agenda is set on Ethiopia time

Thursday 25 August

- 08:30 – 09:15 Arrival and Registration
- 09:15 – 09:30 Welcome
- 09:30 – 09:45 BIOTECHNET introduction
- 09:45 – 10:00 Introduction of data analysis in biology
- 10:00 – 10:30 coffee break

10:30 – 13:00 MODULE 1: Introduction to transcriptomic

- Techniques of transcriptomics (microarray, RNA-seq, EST, and SAGE)
 - Quality control and trimmomatic
 - Transcript Assembly (de novo or reference based)
- 13:00 – 14:00 Lunch break

14:00 – 16:00 MODULE 2: Univariate analysis

- Metadata analysis
- Methods for identifying differentially expressed genes from RNA-seq data (DEGseq)

16:00 – 18:00 MODULE 3: Multivariate analysis (part 1)

- Introduction to the difference between unsupervised and supervised methods
- Preprocessing of the data for multivariate data analysis
- Different approaches of unsupervised learning

Friday 26 August

09:00 – 11:00 MODULE 4: Multivariate analysis (part 2)

- Introduction of concepts of supervised learning
 - Method of supervised learning
 - Accuracy evaluation methods (e.g., cross-validation procedure)
- 11:00 – 11:15 coffee break

11:15 – 13:00 MODULE 5: Enrichment analysis

- Hypergeometric test
 - Gen set enrichment analysis
 - Single samples analysis
 - GenePattern webtool
- 13:00 – 14:00 Lunch break

14:00 – 16:00 Poster session

- Each student has the opportunity to present their research to all member of the conference
 - 2 Abstract will be selected at the moment of the registration to the course for an oral presentation
- 16:00 – 16:15 Closing remark

Location: Bio and Emerging Technology Institute, Addis Ababa

Participation in presence is limited (approx. 20), please apply in advance.

Participants should have some experience with R.

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