Transcriptomics! A workshop on RNA-seq and its many uses

	Sunday 2/3/2025	Monday 3/3/2025	Tuesday 4/3/2025	Wednesday 5/3/2025	Thursday 6/3/2025
08:30-10:30	**Getting the data:** What can we use RNA-seq for? planning, library prep, other sequencing platforms, FASTQ, estimated costs (Eyal)	**Starting simple - bacterial transcriptomics:** mapping to a genome, quantifying expression, pathway enrichment (Daniel)	**Eukaryotic transcriptomics:** mapping spliced RNA, alternative splicing, quantifying expression of alternative isoforms (Eyal)	**Beyond bulk RNA-seq:** Single cell and spatial transcriptomics (Martin)	**Metatranscriptomics** (Maya)
10:30-11:00	Coffee break				
11:00-13:00	*Guest lecturer:* **Amit Zeisel** (Technion) Cell type taxonomy of mammalian brain	*Guest lecturer:* **Dan Bar Yaacov** (Ben Gurion U) It's not just in their DNA: RNA editing occurrence, regulation, and function in bacteria	*Guest lecturer:* **Schraga Schwartz** (Weizmann) The secret building blocks of RNA	*Guest lecturer:* **Tamir Tuller** (Tel Aviv U) Deciphering and targeting novel cancer mutations based on computational models of gene expression and AI	*Guest lecturer:* **Assaf Vardi** (Weizmann) Viral infection in the ocean- A journey across scales
13:00-14:00	Lunch (on your own)				
14:00-16:00	**Tutorial: Quality inspection and quality filtering** fastqc/multiqc, trimmomatic (Kim)	**Tutorial: Genome mapping & quantitation** STAR, IGV, FPKM, PCA, DEseq (Tzipi)	**Tutorial: Differential expression analysis** DEseq – multiple factors (Tzipi) GO enrichment (Kim)	**Tutorial: Single cell analysis** UMAP (Kim)	**Tutorial: Metatranscriptomics** Diamond (Tzipi)
16:00-16:30	Coffee break				
16:30-18:30 Extra tutorials	**Beer and one-minute presentations**	**Tutorial** (continued)	**Tutorial** (continued)	**Tutorial** (continued)	

Morning lectures in Terrace Building room 1007 בניין המדרגה

Afternoon tutorials in Terrace Building room 2007 בניין המדרגה