

## Population genomics workshop

All lectures and tutorials will be held on the ground floor of the Hatter Student Building

	Sunday 17/3/2024	Monday 18/3/2024	Tuesday 19/3/2024	Wednesday 20/3/2024	Thursday 21/3/2024
08:30-10:30	<b>Getting the data:</b> What can we use pop-gen-seq for? Library prep, sequencing technologies, quality control, cost estimates (Daniel&Eyal)	<b>Pop-gen data processing:</b> quality control, mapping to a genome, genotype calling, and quality control! (Eyal)	<b>Demographic inferred:</b> population structure, admixture, species delimitation, and selection inference (Eyal) (Eyal)	<b>Functional genomics:</b> GWAS! (Maya)	<b>Bacterial pop-gen:</b> Genomics of bacterial populations; metagenomics (Daniel)
10:30-11:00	Coffee break				
11:00-13:00	<b>Pop-gen experimental design:</b> different approaches and considerations: whole genome, RAD-seq, pool-seq... (Aparna&Eyal)	<i>Guest lecturer:</i> <b>Sariel Hübner</b> (MIGAL) Genomes, pangenomes and graph-pangenomes	<i>Guest lecturer:</i> <b>Viviane Slon</b> (Tel Aviv University) A history of admixture: Neandertals, Denisovans, and ancient modern humans	<i>Guest lecturer:</i> <b>Ilan Gronau</b> (Reichman University) The ancestral recombination graph (ARG) and its uses in studying population history and species evolution	<i>Guest lecturer:</i> <b>Ayellet Segrè</b> (Harvard) From human genetics and functional genomics to causal mechanisms of complex diseases
13:00-14:00	Lunch (on your own)				
14:00-16:00	<b>Tutorial: Experimental design</b> <i>ddgRADER</i> and quality control (Felix)	<b>Tutorial: Pop-gen data processing</b> whole genome & RAD-seq processing pipelines (Felix&Pnina)	<b>Tutorial: visualization</b> ggplot (Daniel) <b>Tutorial: Demographic inference</b> PCA, ADMIXTURE, gene flow (Felix&Pnina)	<b>Tutorial: Functional genomics</b> GWAS, F <sub>ST</sub> scan, haplotype-based methods (Felix&Pnina)	<b>Tutorial: pop-gen statistics and genomic scans</b> (Felix)
16:00-16:30	Coffee break				
16:30-18:30	<b>Beer, pizza and one-minute presentations</b>	<b>Tutorial</b> (continued)	<b>Tutorial</b> (continued)	<b>Tutorial</b> (continued)	