TUM & GPZ Spring School 2025 - Selection and Breeding

Lecturers: Bruce Walsh, University of Arizona and Gustavo de los Campos, Michigan State University

	Monday March 31	Tuesday April 1	Wednesday April 2	Thursday April 3	Friday April 4	Saturday April 5	Sunday April 6	Monday April 7	Tuesday April 8	Wednesday April 9
09:00 – 10:30	Arrival and Registration	Resemblance between relatives	Breeder's equation	Linear models and BLUP	Lessons learned	GBLUP	Genomic heritability	Neural networks	Transfer learning	Wrap-up
10:30 – 11:00		*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*
11:00 – 12:30		Marker-based relatedness estimation	Matrices	GWAS	Lab	Free time	Reproducing Kernel Hilbert Spaces regression	XGBoost	TBD	Feedback
12:30 – 13:30	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*	*Lunch*
13:30 – 15:30	Class introduction	Free time	Free time	Free time	Free time	Free time	Free time	Free time	Free time	Departure
15:30 – 16:00	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	*Coffee break*	
16:00 – 18:00	Genetic variance	Inbreeding & Heterosis	Multivariate selection	Experimental design	Introduction to Genomic Prediction	Free time	Bayesian models	Multi-trait / multi-env. models	TBD	
18:00 – 19:30	*Dinner*	*Dinner*	*Dinner*	*Dinner*	*Dinner*	*Dinner*	*Dinner*	*Dinner*	*Dinner*	
19:30 – 20:30	Free time	QTL mapping	Index selection	Open breeding discussion	Penalized regressions	Free time	Shrinkage without regularization	Models with env. covariates	Discussions	