



**Understanding the pieces and
how can efficiently assemble**

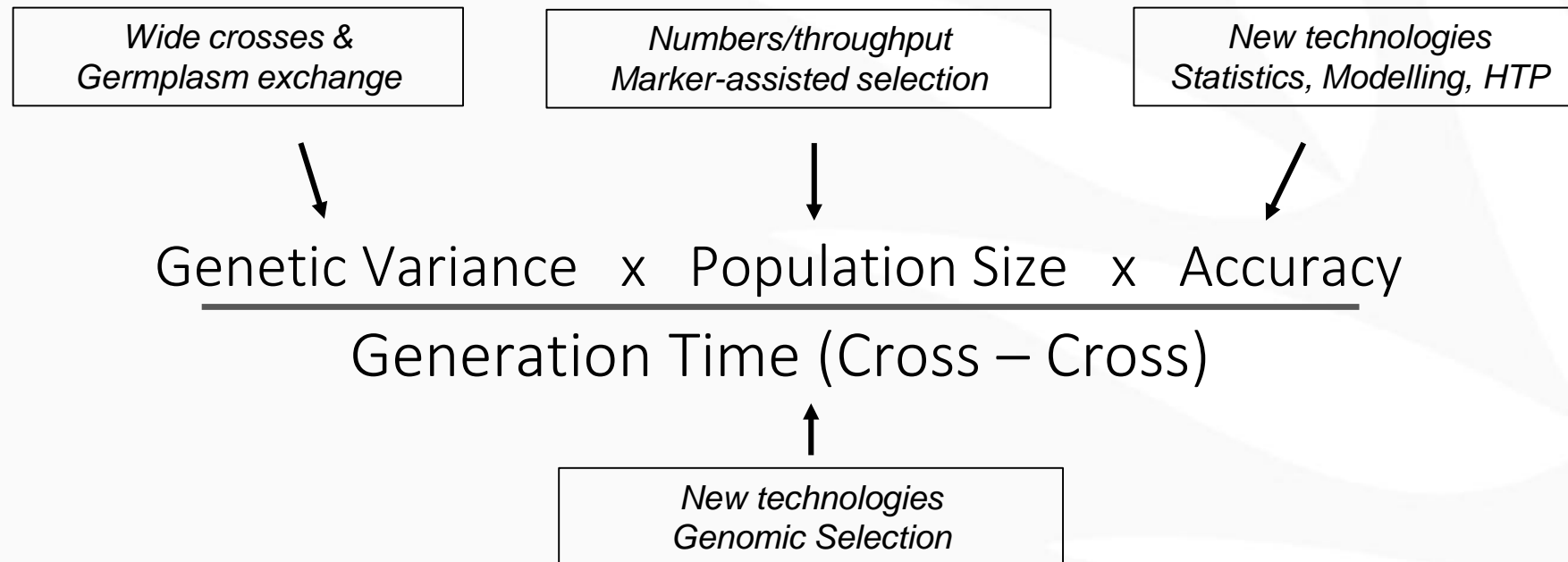
New breeding directions and technologies

GRDC invests significantly across a range of new breeding technologies and support for timely and cost-efficient development of robust crop varieties:

- **Genetic resources: Genetic diversity for new genes and traits provides the foundation**
- **Phenotyping: Improved phenotyping in both precision and throughput helps to disentangle the genetics from environment to increase selection intensity and accuracy**
- **Numerical methodologies: New statistical analysis methods and modelling improves accuracy while allowing to increase program scale (looking for that rare jewel!)**
- **Genomic Resources: Molecular markers to aid in cost-effective selection and in understanding genetic control of traits through to whole genome association**
- **Support to deliver bullet-proof varieties: National rust program, NVT etc.**

In breeder's language,.....

GRDC invests in developing the breeders' tool box delivering improved genetic gain



Today's speakers

- Molecular markers - *Chengdao Li*
- Transgenic breeding/GM - *Geronimo Watson*
- CRISPR/gene editing - *Yong Han*
- Genomic selection - *Dini Ganesalingam*
- Novel germplasm and FIGS - *Ken Street*
- High-throughput phenotyping - *Greg Rebetzke*
- *GRDC invests in the tool box delivering improved genetic gain*
- *Integrating into commercial breeding – David Moody*