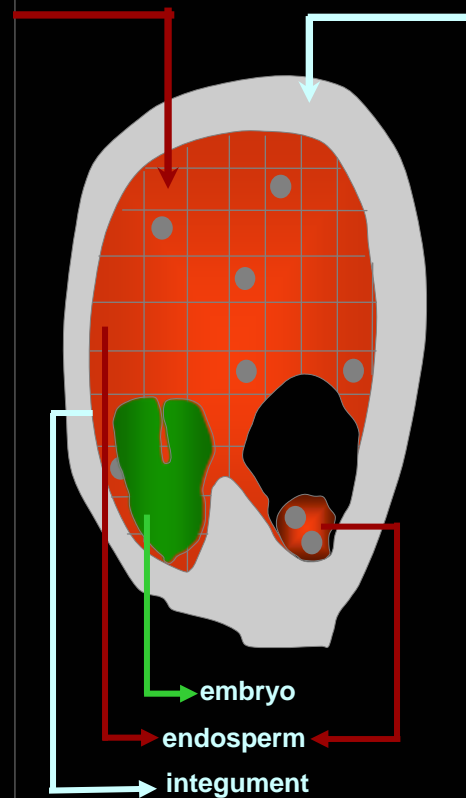
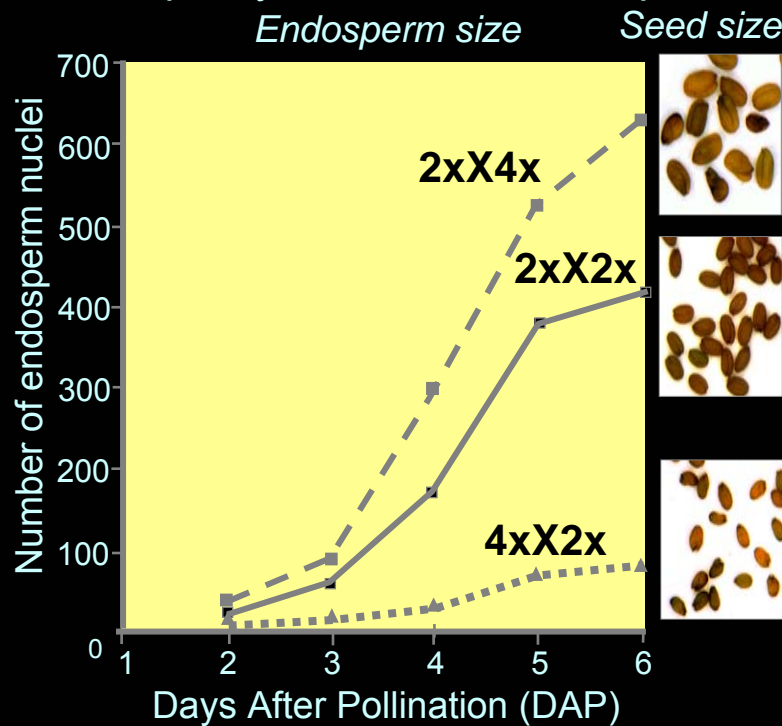


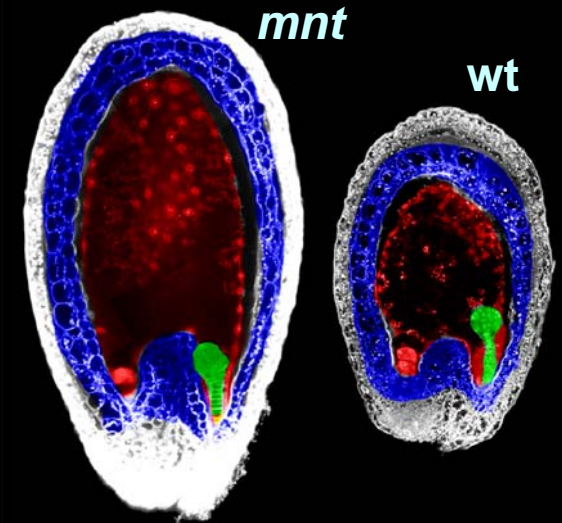
Modulation of seed size

Graham King
Smita Kurup
& Rod Scott (Bath)

Endosperm-led growth demonstrated by interploidy crosses in Arabidopsis



Integument-led growth demonstrated by the *mnt* mutant in Arabidopsis



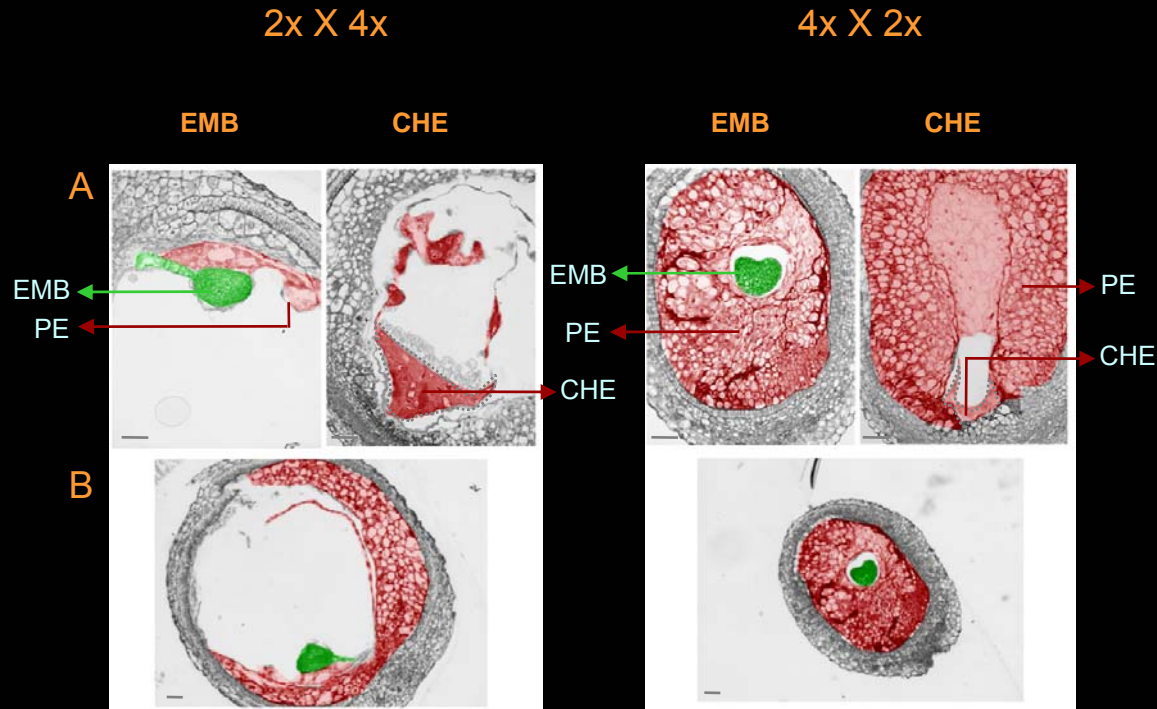
	<i>mnt</i>	wt
Mean number integument cells	52	36
Mean seed weight μg	33	17

Endosperm proliferation

Paternal excess → increases endosperm size by increasing rate and duration of mitosis

Modulation of seed size in *Brassica*

Interploidy crosses in *Brassica*



A. Detail of embryo (EMB), peripheral endosperm (PE) and chalazal endosperm (CHE).

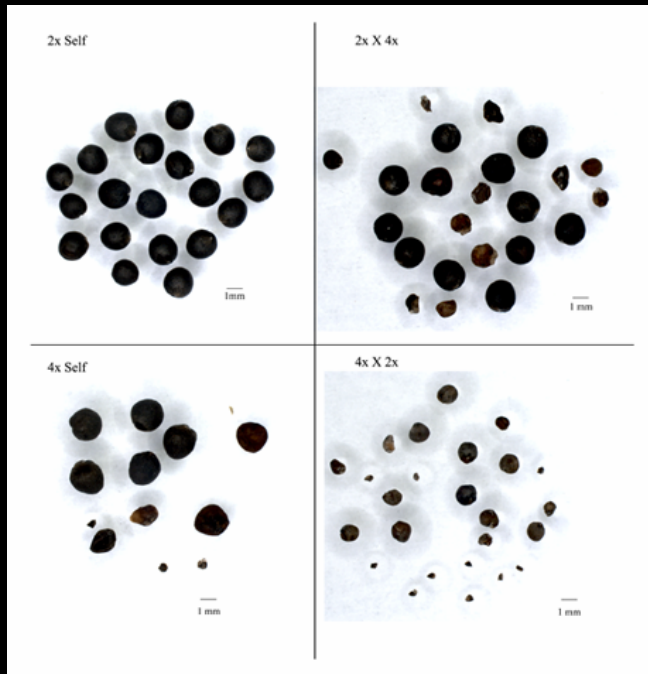
B. Low magnification micrograph showing overall seed size.

Scale bar throughout = 100µm

Modulation of seed size in *Brassica*

Interploidy crosses in *Brassica*

Mature seed



2x X 4x average seed weight = 3.28mg

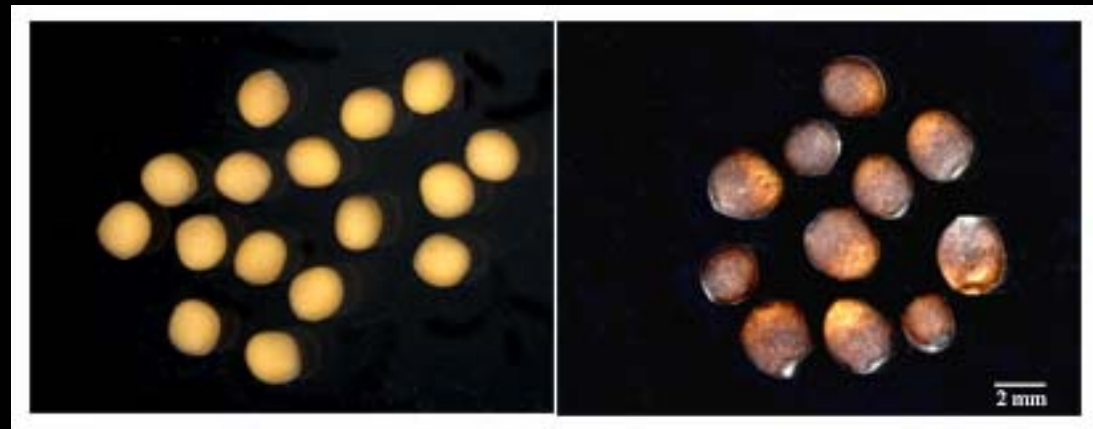
4x X 2x average seed weight = 1.05 mg



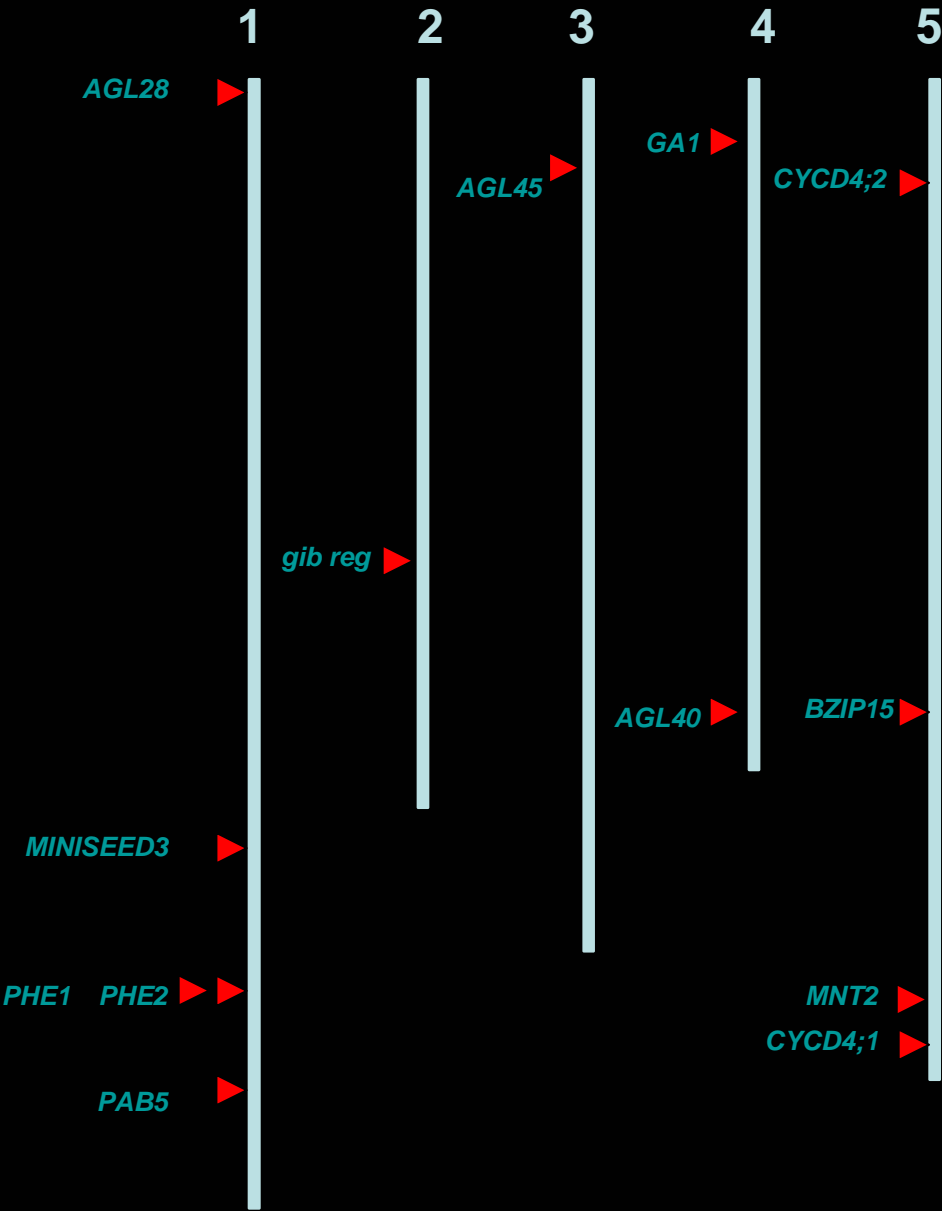
Modulation of seed size in *Brassica*

Monosomic addition lines

Each Line: $2x + 1 = AA_{n=20} + C_{n=1}$



Seeds from single siliques of line C1 (AA+C01, right) are significantly larger than those from parent line (AA genome, left).



Arabidopsis – location of candidate genes from endosperm excess

Candidates identified from differential transcription

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Nira Muttucumaru

