**ON THE COVER**

Anther development depends on coordinated cell expansion in order to elongate filaments and dehisce anthers. Bassil et al. (pages 3482–3497) provide evidence that two members of the *Arabidopsis* Na+/H+ type family of vacuolar antiporters (NHX), NHX1 and NHX2, are specifically required for cell expansion, particularly in rapidly elongating tissues such as filaments and hypocotyls. The authors demonstrate that NHX1 and NHX2 control intracellular potassium and pH to regulate cell expansion. The lack of NHX1 and NHX2 leads to short filaments, nondehiscent anthers, unsuccessful pollination, and a lack of silique formation. The cover displays a scanning electron micrograph of a dehiscent anther about to release its pollen.

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