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On the Cover: A hypersensitive-like lesion is shown in the surface of an Arabidopsis (*Arabidopsis thaliana*) leaf stained with aniline blue and pseudocolored to distinguish between different layers. Spontaneous lesions were found to develop as a result of T-DNA disruptions of two genes encoding vacuolar calcium pumps, *ACA4* and *ACA11* (Boursiac et al., pp. 1158–1171). These lesions provide evidence that the vacuole can modulate calcium signals that trigger a programmed cell death pathway. The main image shows a surface view of a lesion reconstructed from a z-stack (300 μm wide, 200 μm deep) taken throughout the leaf. Epidermal cells and the first layer of mesophyll cells are in green; deeper cells are colored in red, blue, and violet. Below are three tridimensional reconstructions of the lesion, shown from different angles. Images and art work by Yann Boursiac with the help of Volker Baeker and the Montpellier Rio Imaging facility.

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