ON THE COVER

Angiosperm trees produce a specialized type of xylem, tension wood, in response to gravity. Tension wood forms on the upper side of leaning branches and creates strong contractile force to “pull” the stem upwards against gravity. The article by Gerttula et al. (pages 2800–2813) describes the development of tension wood in *Populus*, including how the stems perceive and respond to gravity, as well as the transcriptional networks underlying tension wood development. The cover shows in situ imaging of XET activity in a tangential section of tension wood in *Populus*. Red signal is from XET incorporation of XXS-SR into the specialized gelatinous layer of tension wood fibers, while blue signal is from UV autofluorescence of lignified cell walls. XET activity is believed to be important in force generation in tension wood fibers and serves as a marker for tension wood fiber development.

EDITORIAL

*The Plant Cell Introduces Breakthrough Reports: A New Forum for Cutting-Edge Plant Research*

Sabeeha Merchant, Sebastian Y. Bednarek, James A. Birchler, George Coupland, Nancy A. Eckardt, Pascal Genschik, Jean Greenberg, Joseph J. Kieber, Daniel J. Kliebenstein, Barry J. Pogson, and David Smyth

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