

On the Cover: In dicot leaves, epidermal pavement cells morph from a simple polyhedron to an interdigitated and highly lobed shape. Given the importance of pavement cells for the growth and mechanical stability of leaves, a quantitative analysis of their morphogenesis is critical. Wu et al. (pages 2331–2342) describe a convex hull-based algorithm termed LobeFinder, which uses the XY coordinates of the cell perimeter to locate cell lobes. This new phenotyping tool provides a standardized method to quantify and track lobe formation events. LobeFinder also creates a graphical output to map cell geometry over time. The cover image shows a field of epidermal cells, and the XY coordinates of the center cell were analyzed using LobeFinder. The artwork was created by Samuel A. Belteton. The confocal image was captured by Russell S. Julian.

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^[OPEN]Evolution of Gene Duplication in Plants. *Nicholas Panchy, Melissa Lehti-Shiu, and Shin-Han Shiu*

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Chloroplast-Specific in Vivo Ca²⁺ Imaging Using Yellow Cameleon Fluorescent Protein Sensors Reveals Organelle-Autonomous Ca²⁺ Signatures in the Stroma. *Giovanna Loro, Stephan Wagner, Fabrizio Gandolfo Doccia, Smrutisanjita Behera, Stefan Weinl, Joerg Kudla, Markus Schwarzländer, Alex Costa, and Michela Zottini*

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^[OPEN]LobeFinder: A Convex Hull-Based Method for Quantitative Boundary Analyses of Lobed Plant Cells. *Tzu-Ching Wu, Samuel A. Belteton, Jessica Pack, Daniel B. Szymanski, and David M. Umulis*

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^[OPEN]Expression Pattern Similarities Support the Prediction of Orthologs Retaining Common Functions after Gene Duplication Events. *Malay Das, Georg Haberer, Arup Panda, Shayani Das Laha, Tapas Chandra Ghosh, and Anton R. Schäffner*

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^[OPEN]Inositol Polyphosphate Binding Specificity of the Jasmonate Receptor Complex. *Debabrata Laha, Nargis Parvin, Marek Dynowski, Philipp Johnen, Haibin Mao, Soen T. Bitters, Ning Zheng, and Gabriel Schaaf*

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^[CC-BY]Evolution of Xylan Substitution Patterns in Gymnosperms and Angiosperms: Implications for Xylan Interaction with Cellulose. *Marta Busse-Wicher, An Li, Rodrigo L. Silveira, Caroline S. Pereira, Theodora Tryfona, Thiago C. F. Gomes, Munir S. Skaf, and Paul Dupree*

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- [OPEN]Molecular Evolution and Functional Characterization of a Bifunctional Decarboxylase Involved in Lycopodium Alkaloid Biosynthesis. *Somnuk Bunsupa, Kousuke Hanada, Akira Maruyama, Kaori Aoyagi, Kana Komatsu, Hideki Ueno, Madoka Yamashita, Ryosuke Sasaki, Akira Oikawa, Kazuki Saito, and Mami Yamazaki*
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[OPEN] The THO/TREX Complex Active in miRNA Biogenesis Negatively Regulates Root-Associated Acid Phosphatase Activity Induced by Phosphate Starvation. *Sibo Tao, Ye Zhang, Xiaoyue Wang, Le Xu, Xiaofeng Fang, Zhi John Lu, and Dong Liu*

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