

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,
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Chloroplast-Specific in Vivo Ca²⁺ Imaging Using Yellow Cameleon Fluorescent Protein Sensors
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Plants expressing a chloroplast-localized Cameleon Ca²⁺ probe allow single-organelle analysis of
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^[OPEN]LobeFinder: A Convex Hull-Based Method for Quantitative Boundary Analyses of Lobed
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LobeFinder, a new convex hull-based cell phenotyping tool, creates a coordinate system for cell boundary changes
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^[OPEN]Expression Pattern Similarities Support the Prediction of Orthologs Retaining Common Functions
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Equations for stomatal density and maximum theoretical stomatal conductance as functions of stomatal initiation rate, epidermal cell size, and stomatal size enable scaling from development to flux. 2358

^[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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^[OPEN]FERONIA and Her Pals: Functions and Mechanisms. *Chao Li, H.-M. Wu, and Alice Y. Cheung*

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^[OPEN]Microalgae Synthesize Hydrocarbons from Long-Chain Fatty Acids via a Light-Dependent Pathway. *Damien Sorigué, Bertrand Légeret, Stéphan Cuiné, Pablo Morales, Boris Mirabella, Geneviève Guédeney, Yonghua Li-Beisson, Reinhard Jetter, Gilles Peltier, and Fred Beisson*

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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]Different Pathways Act Downstream of the CEP Peptide Receptor CRA2 to Regulate Lateral Root and Nodule Development. *Nadiatul A. Mohd-Radzman, Carole Laffont, Ariel Ivanovici, Neha Patel, Dugald Reid, Jens Stougaard, Florian Frugier, Nijat Imin, and Michael A. Djordjevic*
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[OPEN] Rice Root Architectural Plasticity Traits and Genetic Regions for Adaptability to Variable Cultivation and Stress Conditions. *Nitika Sandhu, K. Anitha Raman, Rolando O. Torres, Alain Audebert, Audrey Dardou, Arvind Kumar, and Amelia Henry*

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[^{OPEN}]The ERF11 Transcription Factor Promotes Internode Elongation by Activating Gibberellin Biosynthesis and Signaling. Xin Zhou, Zhong-Lin Zhang, Jeongmoo Park, Ludmila Tyler, Jikumaru Yusuke, Kai Qiu, Edward A. Nam, Shelley Lumba, Darrell Desveaux, Peter McCourt, Yuji Kamiya, and Tai-ping Sun

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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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