

	<b>Commentary and Review</b>	
<i>Insight/Outlook</i>	Ethical, legal, and social considerations in conducting the Human Microbiome Project Amy L. McGuire, James Colgrove, Simon N. Whitney, Christina M. Diaz, Daniel Bustillos, and James Versalovic	1861
	<b>Research</b>	
<i>Letters</i>	Analysis of copy number variants and segmental duplications in the human genome: Evidence for a change in the process of formation in recent evolutionary history Philip M. Kim, Hugo Y.K. Lam, Alexander E. Urban, Jan O. Korb, Jason Affourtit, Fabian Grubert, Xueying Chen, Sherman Weissman, Michael Snyder, and Mark B. Gerstein	1865 <sup>OA</sup>
	Active <i>Alu</i> retrotransposons in the human genome E. Andrew Bennett, Heiko Keller, Ryan E. Mills, Steffen Schmidt, John V. Moran, Oliver Weichenrieder, and Scott E. Devine	1875
	Characterization of the bovine pseudoautosomal boundary: Documenting the evolutionary history of mammalian sex chromosomes Anne-Sophie Van Laere, Wouter Coppieters, and Michel Georges	1884
	Transcriptional enhancement by GATA1-occupied DNA segments is strongly associated with evolutionary constraint on the binding site motif Yong Cheng, David C. King, Louis C. Dore, Xinmin Zhang, Yuepin Zhou, Ying Zhang, Christine Dorman, Demesew Abebe, Swathi A. Kumar, Francesca Chiaromonte, Webb Miller, Roland D. Green, Mitchell J. Weiss, and Ross C. Hardison	1896 <sup>OA</sup>
	Genome-wide relationship between histone H3 lysine 4 mono- and tri-methylation and transcription factor binding A. Gordon Robertson, Mikhail Bilenky, Angela Tam, Yongjun Zhao, Thomas Zeng, Nina Thiessen, Timothee Cezard, Anthony P. Fejes, Elizabeth D. Wederell, Rebecca Cullum, Ghia Euskirchen, Martin Krzywinski, Inanc Birol, Michael Snyder, Pamela A. Hoodless, Martin Hirst, Marco A. Marra, and Steven J.M. Jones	1906 <sup>OA</sup>

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	Pathogen corruption and site-directed recombination at a plant disease resistance gene cluster Ervin D. Nagy and Jeffrey L. Bennetzen	1918
	Many or most genes in <i>Arabidopsis</i> transposed after the origin of the order Brassicales Michael Freeling, Eric Lyons, Brent Pedersen, Maqseudul Alam, Ray Ming, and Damon Lisch	1924
	DNA methylation and heterochromatinization in the male-specific region of the primitive Y chromosome of papaya Wenli Zhang, Xiue Wang, Qingyi Yu, Ray Ming, and Jiming Jiang	1938
	<b>Methods and Resources</b>	
<i>Methods</i>	Unraveling ancient hexaploidy through multiply-aligned angiosperm gene maps Haibao Tang, Xiyin Wang, John E. Bowers, Ray Ming, Maqseudul Alam, and Andrew H. Paterson	1944
	Multigenome DNA sequence conservation identifies <i>Hox cis</i> -regulatory elements Steven G. Kuntz, Erich M. Schwarz, John A. DeModena, Tristan De Buysscher, Diane Trout, Hiroaki Shizuya, Paul W. Sternberg, and Barbara J. Wold	1955
	DNA methylation profile of tissue-dependent and differentially methylated regions (T-DMRs) in mouse promoter regions demonstrating tissue-specific gene expression Shintaro Yagi, Keiji Hirabayashi, Shinya Sato, Wei Li, Yoko Takahashi, Tsutomu Hirakawa, Guoying Wu, Naoko Hattori, Naka Hattori, Jun Ohgane, Satoshi Tanaka, X. Shirley Liu, and Kunio Shiota	1969
	Gene prediction in novel fungal genomes using an ab initio algorithm with unsupervised training Vardges Ter-Hovhannisyan, Alexandre Lomsadze, Yury O. Chernoff, and Mark Borodovsky	1979
	Finding friends and enemies in an enemies-only network: A graph diffusion kernel for predicting novel genetic interactions and co-complex membership from yeast genetic interactions Yan Qi, Yasir Suhail, Yu-yi Lin, Jef D. Boeke, and Joel S. Bader	1991 <sup>OA</sup>
<i>Resources</i>	Genome-scale spatiotemporal analysis of <i>Caenorhabditis elegans</i> microRNA promoter activity Natalia J. Martinez, Maria C. Ow, John S. Reece-Hoyes, M. Inmaculada Barrasa, Victor R. Ambros, and Albertha J.M. Walhout	2005

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Haplotype sorting using human fosmid clone end-sequence pairs 2016  
Jeffrey M. Kidd, Ze Cheng, Tina Graves, Bob Fulton,  
Richard K. Wilson, and Evan E. Eichler

Sequencing of natural strains of *Arabidopsis thaliana* with short reads 2024<sup>OA</sup>  
Stephan Ossowski, Korbinian Schneeberger, Richard M. Clark,  
Christa Lanz, Norman Warthmann, and Detlef Weigel

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<sup>OA</sup>Open Access paper.



**Cover** Female papaya trees with homogametic sex chromosome genotype XX. In this issue, four knob-like heterochromatin structures specific to the male-specific region of the “young” papaya Y chromosome are reported. The DNA sequences associated with these heterochromatic knobs are highly divergent and heavily methylated compared to those of its X chromosome counterpart, suggesting that DNA methylation and heterochromatinization play an important role in the early stage of sex chromosome evolution in papaya. (Photo: Qingyi Yu. [For details, see Zhang et al., pp. 1938–1943.]