

Research

- Whole-genome long-read sequencing downsampling and its effect on variant-calling precision and recall** 2029^{OA}
William T. Harvey, Peter Ebert, Jana Ebler, Peter A. Audano, Katherine M. Munson, Kendra Hoekzema, David Porubsky, Christine R. Beck, Tobias Marschall, Kiran Garimella, and Evan E. Eichler
- A DNA methylation haplotype block landscape in human tissues and preimplantation embryos reveals regulatory elements defined by comethylation patterns** 2041
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- A naturally occurring variant of *MBD4* causes maternal germline hypermutation in primates** 2053^{OA}
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- De novo transcriptome assembly of mouse male germ cells reveals novel genes, stage-specific bidirectional promoter activity, and noncoding RNA expression** 2060^{OA}
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- Revisiting chromatin packaging in mouse sperm** 2079
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Methods

Using long-read CAGE sequencing to profile cryptic-promoter-derived transcripts and their contribution to the immunopeptidome

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Ju Heon Maeng, H. Josh Jang, Alan Y. Du, Shin-Cheng Tzeng, and Ting Wang

Assessing and mitigating privacy risks of sparse, noisy genotypes by local alignment to haplotype databases

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Prashant S. Emani, Maya N. Geradi, Gamze Gürsoy, Monica R. Grasty, Andrew Miranker, and Mark B. Gerstein

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Cover Like origami, DNA is intricately folded inside of a cell's nucleus. DNA compaction differs in distinct cell types, like somatic and germ cells, and is typically tightly controlled by the function of cohesin, a protein complex that mediates sister chromatid cohesion and DNA looping. In this issue, it is shown that in frog and human sperm, genomic DNA is not folded by cohesin, as it is in somatic cells, possibly because in these cells DNA is densely packaged by specialized sperm proteins called protamines. Earlier work by others had reported that in mouse sperm the genome is folded by cohesin but, in a related study (also in this issue), it was found that these data were caused by chromatin contaminations from somatic cells. Together, these two studies suggest that in sperm from all vertebrate species genomic DNA might be packaged very differently from how it is folded in somatic cells. (Cover illustration by Philipp Dexheimer (www.philippdexheimer.com). [For details, see Jessberger et al., pp. 2094–2107 and Yin et al., pp. 2079–2093.]