Special Issue

Advances in Single Molecule, Real-Time (SMRT) Sequencing

Message from the Guest Editors

PacBio's single molecule, real-time (SMRT) sequencing technology offers important advantages over the short-read DNA sequencing technologies that currently dominate the market. This includes exceptionally long read lengths (20 kb or more), unparalleled consensus accuracy, and the ability to sequence native, non-amplified DNA molecules. From microbes to vertebrates, long reads are now used to create highly accurate de novo genome assemblies, characterize complex structural variations, permit full-length RNA isoform sequencing, and directly phase variants. The high accuracy further enables low frequency mutation detection and clonal evolution determination. Besides reducing biases, sequencing native DNA also permits the direct measurement of DNA base modifications. Therefore, SMRT sequencing has become an attractive technology in many fields, such as agriculture, basic science, and medical research. This Special Issue is a collection of articles showcasing the latest developments and the breadth of applications enabled by SMRT sequencing technology.

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Message from the Editor-in-Chief

Genes is central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fast-moving field. There is a need for good quality, open access journals in this area, and the *Genes* team aims to provide expert manuscript handling, serious peer review, and rapid publication across the whole discipline of genetics. Starting in 2010, the journal is now well established and recognised. Why not consider *Genes* for your next genetics paper?

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