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

Guest Editors:

Dr. Adam Ameur

Department of Immunology,
Genetics and Pathology, Uppsala
University, Science for Life
Laboratory, 75108 Uppsala,
Sweden

Dr. Matthew S. Hestand

1. Division of Human Genetics,
Cincinnati Children's Hospital
Medical Center, 3333 Burnet Ave,
Cincinnati, OH 45229, USA
2. Department of Pediatrics,
University of Cincinnati, 2600
Clifton Ave, Cincinnati, OH 45220,
USA

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Message from the Guest Editors

Dear Colleagues,

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.

Dr. Adam Ameur
Dr. Matthew S. Hestand
Guest Editors



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Special Issue



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Editor-in-Chief

Prof. Dr. Selvarangan Ponnazhagan

Department of Pathology, The
University of Alabama at
Birmingham, 1825 University
Blvd, SHEL 814, Birmingham, AL
35294-2182, USA

Message from the Editor-in-Chief

Genes are central to our understanding of biology, and modern advances such as genomics and genome editing have maintained genetics as a vibrant, diverse and fastmoving 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.

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Genes Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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