# Special Issue

# Clinical Cytogenetics: Current Advances and Future Perspectives

## Message from the Guest Editor

Clinical cytogenetics has undergone remarkable transformations since the early days of G-banded chromosome analysis. High-resolution molecular techniques including fluorescence in situ hybridization (FISH), chromosomal microarray, and genome mapping technologies continue to revolutionize our ability to detect and understand chromosomal abnormalities at an unprecedented level of detail.

These advancements have significantly impacted clinical practice and improved patient outcomes. Automation and the introduction of AI algorithms in cytogenetics labs for sample processing, image analysis, and data interpretation. These technologies not only improve efficiencies but also enhance the accuracy and reproducibility of cytogenetic analyses. Currently, AI algorithms are limited to digital karyotyping and FISH applications, but the future of AI in the cytogenetics lab will certainly continue to drive efficiencies in other areas of data analysis. This Special Issue, dedicated to the current advances and future perspectives in the field of clinical cytogenetics/cytogenomics, will address these topics.

## Guest Editor

Dr. Rachel D Burnside

Department of Pathology, Immunology, and Laboratory Medicine, University of Florida, Gainesville, FL, USA

## Deadline for manuscript submissions

closed (25 April 2025)

GCAT
TACG
GCAT

Genes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5
Indexed in PubMed

mdpi.com/si/221111

*Genes*
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
genes@mdpi.com

mdpi.com/journal/genes

MDPI

GCAT
TACG
GCAT

# Genes

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.5
Indexed in PubMed

mdpi.com/journal/genes

MDPI

# About the Journal

## 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?

## 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

## Author Benefits

**Open Access:**

free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:**

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Embase, PubAg, and other databases.

**Journal Rank:**

JCR - Q2 (Genetics and Heredity) / CiteScore - Q2 (Genetics (clinical))