

## Preface

# Molecular Pathology: What a Difference a Year Makes



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*Editor*

This past year brought struggles and challenges to the entire world, including molecular diagnostic laboratories, due to the ongoing severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic. Overcoming supply chain issues affecting reagents, other consumables and disposables, along with staffing and equipment issues highlighted the importance of robust laboratory services as well as the ingenuity and creativity of laboratorians to meet those challenges head on. Polymerase chain reaction became a household term and the gold standard for viral detection. The laboratory-developed test in several varieties once again became the go-to assay that saved the day. From diagnostic testing through screening and surveillance testing and ultimately viral sequencing to detect variant strains of SARS-CoV-2, our laboratories delivered on the unmet and uncertain needs of providers and patients globally. At the time of this writing, countries have ramped up efforts to vaccinate individuals with one of several available vaccines, and in the United States, numbers of new cases and deaths due to COVID-

19 have significantly subsided. Globally, the virus continues to be a major cause of morbidity and mortality in numerous countries that have had delayed vaccination responses, and the potential resurgence of COVID-19 cases in those younger individuals that have yet to be vaccinated remains a threat. Our hope is that continued vaccination and mitigation strategies will end this pandemic if we remain vigilant and a new sense of “normalcy” will prevail.

In this fourth issue of *Advances in Molecular Pathology*, we include another special section on COVID-19 that highlights experiences from a laboratory perspective, serologic testing, and genomic surveillance of variants. Our colleagues and authors found the time to shed light on some of the more interesting developments in the field of molecular pathology despite the burden that the pandemic has taken on all of us. Clinical genomics is not a passing fad as some had predicted; it is here to stay, and our stewardship of the testing on the analytical and interpretative sides remains critical to patient care. In this issue, we review advances in the field of

molecular pathology with regards to developments in genetic disease, hematologic disease, infectious disease, pharmacogenomics, solid tumors, and informatics. Several articles present novel technologies, such as optimal genome mapping, point-of-care diagnostics, and artificial intelligence. Operationalizing genomic medicine in a clinical setting and assessing minimal residual disease, cell-free nucleic acids, and tumor mutation burden are discussed as impactful strategies in the management of the patient with cancer. Finally, germline variants, nutrigenomics, and hypertension are presented as new applications of pharmacogenomics.

I am grateful to those friends and colleagues who once again during the most pressing of times agreed to become section editors and authors of the fantastic articles presented here.

Happy reading!

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