

It's a wrap for 2021!

In our *Focus on 2021 in Review*, the *Nature Cancer* team and leading experts look back at the biggest developments for the cancer field over the past 12 months.

What a year this has been! Bookended by the rise of new SARS-CoV-2 variants of concern, distinguished by the rollout of massive global vaccination campaigns, marred by vaccine inequity and hesitancy, and punctuated by COVID-19 surges, 2021 has been a rollercoaster year during which the much-desired 'return to normal' has remained unrealized. Nevertheless, despite the many pandemic-related complications that patients, clinicians and researchers have continued to face, the cancer field has seen remarkable progress over the past 12 months.

In this issue, we revisit the most striking advances and biggest challenges for cancer research and oncology during the past year in our *Focus on 2021 in Review*. In this dedicated Focus, we present specially commissioned pieces that include news, comment and analysis from leaders in the cancer field, together with our editorial team's selected highlights from the cancer literature and a collection of some of the most popular *Nature Cancer* papers.

2021 has been a year of milestones. One of these is the celebration of 50 years since the National Cancer Act was signed into law in the United States. We discuss the legacy of this legislation for cancer research and care, and the implications of the pandemic for further progress with Ned Sharpless, Director of the National Cancer Institute¹. The effect of the pandemic on cancer research and patients with cancer is also the focus of our discussion with Elisabeth Weiderpass², Director of the International Agency for Research on Cancer of the World Health Organization. Taking a more focused view, Pramesh et al.³ discuss how COVID-19 has been affecting cancer care in India, whereas Elie Dolgin⁴ covers the continued challenges facing patients with cancer after two years of pandemic-related complications and despite the availability of vaccines.

On a more positive note, this year we celebrate two other milestones: the twentieth anniversary of the publication of the human genome and 15 years since the launch of The Cancer Genome Atlas Program. Elaine Mardis⁵ discusses how these efforts and advancing technologies have fostered the development of the thriving field of cancer genomics for diagnosis and precision oncology. On the theme of harnessing big data, Constance Lehman and Shandong Wu⁶ highlight how artificial intelligence is revolutionizing the analysis of clinical cancer datasets and the challenges of deeper integration of such approaches in oncology. Continuing the focus on technological advances, Song Chen and Sarah Teichmann⁷ take a deep dive into the unprecedented resolution that single-cell multi-omics approaches are providing in tumor profiling and cancer heterogeneity in the pursuit of new and improved therapies.

Indeed, 2021 has been an exciting year for cancer therapy, as highlighted in Asher Mullard's article⁸ on key breakthroughs and setbacks in the cancer drug pipeline over the past 12 months. Rafael Rosell⁹ gives an in-depth overview of one of these major developments — the regulatory approval of the first mutant KRAS inhibitor. The past year has also witnessed exciting clinical developments in the field of immunotherapy. Caroline Robert¹⁰ discusses the promising results of using anti-LAG-3 immune checkpoint inhibitors as a combination immunotherapy regimen in later-stage clinical trials for melanoma. In addition, Bullman et al.¹¹ give their bench-to-bedside perspective on early clinical trials of fecal microbiota transplantation for improved immunotherapy response in melanoma.

Finally, early-career investigators¹² from around the globe provide the human perspective on what this year has

been like for researchers on the ground, by describing their experiences and expectations for the future.

The enduring thematic threads that run through these articles are the urgency to improve outcomes, care and quality of life for patients with cancer and the ingenuity and dedication of cancer researchers and clinicians in their efforts to do so, even as we are about to enter the third year of the COVID-19 pandemic. Together with our editorially curated highlights from the literature, published in *Nature Cancer* and elsewhere, we hope that our readers will find the content of our *Focus on 2021 in Review* enlightening about the current status of the cancer field and inspiring about the year to come. We thank our authors for their contributions and wish you a happy, healthy and successful 2022. □

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