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## Editorial

The Year 2020 in Review at ASTRO's *Advances*Robert C. Miller, MD, MBA, FASTRO, FRSA,<sup>a,\*</sup> and  
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By any measure, 2020 has been an extraordinary year. For the American Society for Radiation Oncology's (ASTRO's) *Advances in Radiation Oncology*, COVID-19 and the national movement toward racial equity have led to the submission of some of the most read and cited papers in *Advances*. Additionally, the urgency created by the response to COVID-19 has accelerated the transition to open science in research and academic publishing.

The rapid spread of SARS-CoV-2 globally since early 2020 and its impact on the clinical operation and care of radiation oncology patients drove scientific journals to accelerate the process of publishing (Fig 1). Here at *Advances*, we created a rapid response editorial team to rapidly, but comprehensively, review manuscripts and turn around the more critical manuscripts in a 24- to 72-hour peer review timeframe. This has led to rapid publication and dissemination of narrative accounts of operations in the face of COVID-19—from nations that first faced the challenge of SARS-CoV-2, followed by guidelines for best practices for clinic operations during the pandemic, and disease-specific guidelines for hypofractionation of radiation therapy courses to decompress clinics and allow better social distancing of patients and staff. Additionally, the rapid workflow allowed us to address crucial issues of healthy equity, diversity, and inclusion in a timely manner. Unlike the *Red Journal* and *Practical Radiation Oncology*, *Advances* has no annual page budget, and the volume of manuscripts related to COVID-19 and other contemporary topics we could publish was only limited by the scientific quality of the submitted papers.

The article by Winkfield et al<sup>1</sup> on racial justice in radiation oncology has been one of the most read and widely shared on social media published to date in *Advances*. It is also one of the handful of radiation oncology manuscripts that have received widespread attention outside of our field. Given the events of last summer, we believed it critical to publish the article to foster further discussion on race and our medical profession. In the words of Martin Luther King, Jr., "Our lives begin to end the day we become silent about things that matter."

Preprints have come into prominence during the pandemic as part of a broader demand for openness and speed in science publishing. At *Advances*, for the first time, COVID-19 articles accepted during the first surge of cases were immediately published as post-peer review preprints on ASTRO's web servers for immediate access rather than going through the traditional production mechanism before appearing on the journal's official website. Adapting preprints into the traditional research/publishing lifecycle will be a challenge for academic publishing for the next several years as preprints grow in usage after the pandemic recedes. Mechanisms are currently being put into place to allow submission of preprints directly for peer review in traditional journals that will seamlessly transfer manuscripts and data from the preprint server to the journals' editorial systems. These transfer services are already being used by major corporate publishers.

Although not directly influenced by the pandemic, efforts to integrate artificial intelligence into editorial systems will grow in coming years, with early efforts to use artificial intelligence to select peer reviewers and detect plagiarism already starting.<sup>2</sup> Figure 2 highlights some of these trends. The pandemic strained the entire publishing system in many ways, highlighting for editors already existing challenges in managing efficient and

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**Figure 1** Radiation oncology in 2020. Two therapists wearing protective equipment treat a patient in early 2020 in Wuhan. This figure was originally published in *Advances in Radiation Oncology*, Volume 5, Wu S., Zheng D., Liu Y., Hu D., Wei W., Han G, Radiation therapy care during a major outbreak of COVID-19 in Wuhan, 531-533, Copyright Elsevier 2020.<sup>5</sup>

- Plagiarism/data fabrication detection
- Automated searching for published data
- AI assisted Peer Review

**Figure 2** Trends in artificial intelligence and publishing.

thorough peer review that existed before the large influx of new manuscripts stressed the system. In future crises, automated tools will provide greater robustness and flexibility when faced with rapid workload changes. Meanwhile, we are keenly aware that computerized processes have limitations and will not be able to discern the validity of submitted data. In the era of speedy turnaround

of publications, it is crucial to ensure the accuracy and authenticity of accepted manuscripts so that the published articles justify their scientific merits.

As 2020 reaches an end, our most-read articles are no longer COVID-19 related. The most read at this time is an analysis of the declining number of radiation oncology residency applications.<sup>3</sup> The second most read is a more traditional patterns-of-failure manuscript examining recurrences after intensity modulated radiation therapy for head and neck squamous cell carcinomas of unknown origin.<sup>4</sup> The previously referenced article by Winkfield et al is third. The selection represents a broader pattern in our readership; over the last year a rise has been seen in the interest in topical manuscripts over those presenting more typical scientific investigations, not only in COVID-19 but in broader areas of professionalism, equity, and education.

In conclusion, we would like to extend our gratitude to our readers, peer reviewers, and editorial staff for allowing *Advances* to thrive in this difficult past year.

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