

Brief Opinion

***ASTRO's Advances in Radiation Oncology:* Success to date and future plans**

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Abstract

ASTRO's Advances in Radiation Oncology was launched as a new, peer-reviewed scientific journal in December 2015. More than 200 manuscripts have been submitted and 97 accepted for publication as of May 2017. As *Advances* enters its second year of publication, we have chosen to highlight subjects that will transform the way we practice radiation oncology in special issues or ongoing series: immunotherapy, biomedical analytics, and social media. A teaching case report contest for North American radiation oncology residents will be launched at American Society of Radiation Oncology 2017 to encourage participation in scientific publication by trainees early in their careers. Recognizing our social mission, *Advances* will also begin a series of articles devoted to highlighting the growing disparities in access to radiation oncology services in vulnerable populations in North America. We wish to encourage the American Society of Radiation Oncology membership to continue its support of the journal through high-quality manuscript submission, participation in the peer review process, and highlighting important manuscripts through sharing on social media.

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Introduction

In July 2015, the American Society of Radiation Oncology (ASTRO) launched its third academic journal, *Advances in Radiation Oncology*. With the growth of

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research output in radiation oncology over time, the journal was created to provide a quality outlet for members of the global radiation oncology community to publish the results of their research. *Advances* follows a “gold” open access model in which every published paper is freely available to all. Authors also retain limited copyright. The journal is also meant to be a social enterprise that is financially self-sustaining and creates value by making the content of the journal freely available to all, including clinicians in developing nations where resources are limited and, most importantly, to our patients, who typically do not have access to conventional journals that require subscription fees for access.

Since its initial call for papers in August 2015, *Advances* has received more than 200 submissions and published 97 of those manuscripts. The time to first decision on manuscripts is on average about 5.5 weeks and time to final acceptance is roughly 11 weeks (Fig 1). Authors who have submitted manuscripts to *The International Journal of Radiation Oncology Biology and Physics* and *Practical Radiation Oncology* that are not accepted may choose to have those manuscripts automatically cascaded for consideration in *Advances*. Peer review comments are transferred to *Advances* along with the cascaded papers, potentially further expediting review of the papers.

As *Advances* enters its second year of publication, we have chosen to highlight subjects that will transform the way we practice radiation oncology in special issues or ongoing series: immunotherapy, biomedical analytics, and social media (Fig 2). A teaching case report contest for North American radiation oncology residents will be launched at ASTRO 2017 to encourage participation in scientific publication by trainees early in their careers. Recognizing our social mission, we will also begin a series of articles devoted to highlighting the growing disparities in access to radiation oncology services in vulnerable populations in North America.

Special issue: Immunotherapy

Radiation therapy (RT) is a cornerstone in the treatment paradigm across myriad malignancies. Its mechanism of action has traditionally focused on the damaging effects of ionizing radiation to the tumor and its micro-environment. Emerging data have shown that RT can not only cause an immunogenic cell death, but also harness the immune system to reject the tumor. Given that immunotherapy has emerged as a groundbreaking new approach in cancer treatment, exploring the far-reaching potential impact of incorporating radiation therapy with immunotherapy is not only natural but also very exciting. Radiation may act synergistically with immunotherapy to enhance immune responses and/or alter the phenotype of tumor cells, thus rendering tumors more vulnerable to

- Over 200 manuscripts submitted in the first 18 months of operation and 97 accepted for publication by May of 2017
- Rejection rate initially 50%, now approximately 35%
- Fast turnaround, first decision in roughly 5 weeks
- Online readership and authorship growing globally

Figure 1 Successes to date.

immune-mediated killing.¹ The study of combination radioimmunotherapy is in its infancy, and rather than resulting in a single synergistic mechanism, there are likely different mechanisms of synergy when combining RT with different immunotherapeutic agents.² Other factors that may play a role in determining optimal responses are likely histology, agent, and site specific. Further basic, translational, and clinical studies are necessary to elucidate the optimal strategy for combining RT and immunotherapy to achieve maximal systemic impact. A special issue dedicated to this cutting-edge topic will not only allow authors to disseminate their research but also provide readers with focused scientific and clinical topics in this burgeoning field.

Special issue: Big data analytics

The number of centers dedicating resources for construction of systems to automate aggregation of data from electronic health records, radiation oncology information systems, Treatment Planning Systems, and other electronic information sources for all treated patients is increasing. This progress stems from the growing number of members in our community who are developing health care informatics science applied to radiation oncology from both practical and theoretical perspectives. Supporting this growth, professional societies are becoming increasingly proactive in the development and promotion of standards such as nomenclatures or ontologies that, by common adoption, will increase the volume and quality of data available for single and multi-institutional investigations. Because large comprehensive data sets detailing prognostic, diagnostic, treatment, and outcomes cofactors are emerging, researchers are broadening the scope of the analytics methods routinely encountered in our field with statistical and machine learning analytics approaches suited to these large, diverse datasets. Advances in data science, supporting specific efforts in radiation oncology, are frequently generalized to other specialties in health care that are anxious to find a means to incorporate Big Data into research and clinical practice and create new bridges to those specialties. The power of Big Data also has profound implications for our responsibilities in the use of that data and fostering trust that patient data are used for the good of patients. Explorations of health care data science ethics need to accompany technical explorations of big data in radiation oncology.

A special issue devoted to exploring the multiple facets of health care informatics in radiation oncology will inform scientific, clinical, and health care policy for this emerging world of possibilities.

New article series: Disparities in Radiation Oncology in North America

There has recently been reinvigorated zeal within the United States to spread optimal RT access worldwide regardless of sex, race, religion, or socioeconomic status.³ Although this is a noble mission, it is important that we as a medical community never neglect the equally noble task of bridging the barriers that prevent many in North America from receiving RT, barriers that, in some cases, are as great as those in the poorest nations in the world. With the increasing advancements in technology and efficacy in radiation oncology, those with reduced or absent access to RT suffer a comparatively more diminished state of care today than at any point in history.^{4,5} It is our sworn duty as health care providers not only to be aware of these disparities, but also to help provide optimal care to those within our own borders who are most vulnerable to these disparities. To this end, this series will focus on 4 US populations most vulnerable to limited RT access: African Americans, Native Americans, Hispanic Americans, and North Americans living in rural regions. It is our fervent belief that increased awareness of the barriers these populations face in receiving optimal RT access will help us as a medical community to relieve much of the undue suffering resulting from these disparities.

New article series: The Growing Importance of Social Media in Radiation Oncology

Incorporation of social media into our daily lives has become mainstream all around the world. Ninety percent of US adults use the Internet, and more than 72% use it to look up health information. Thirty-five percent of patients have gone online to determine a medical condition they or someone else might have and 18% also specifically went online to connect with other patients with health concerns similar to theirs.⁶ The ways in which health care providers use social media in daily practice remain underexamined.⁷ Radiation oncologists' use of social media may fall into 1 of 3 categories: professional education, disseminating information to the public about our field, and providing new opportunities to interact with patients and other health care professionals and institutions.⁸ Radiation oncologists can raise awareness of clinical trials in radiation oncology and encourage participation through the use of social media. In the coming years, social media holds promise for novel research regarding its impact on providing a more interactive educational experience,

- *Special issues planned*
 - Immunotherapy and Radiation Oncology
 - Big Data and Radiation Oncology
- *New article series*
 - The Pervasive Crisis of Diminishing Radiotherapy Access for Vulnerable Populations in the United States
 - Social Media and Radiation Oncology
- *Educational initiatives*
 - Best case report written by a radiation oncology resident submitted between July 1, 2017 and December 31, 2017

Figure 2 Upcoming features for 2017 and 2018.

enhancing opportunities to influence care delivery, and accelerating the dissemination of information both within and outside the radiation oncology community. *Advances* itself is increasingly being shared through social media (Fig 3). Given the popularity and almost universal appeal of social media, we want to encourage radiation oncologists and their institutions to submit social media research and the impact it has on delivering quality care in radiation oncology.

New focus: Participation of radiation oncology residents in research

Research experience for radiation oncology residents is in an integral part of training. To practice evidence-based medicine, it is imperative to understand how an idea can become an experiment that can ultimately be conducted and evaluated. Residency offers an opportunity to receive mentorship in developing investigation skills from an experienced mentor. Research productivity also fosters dialog within the community and advancement within the field; thus, research and publications should be highlighted during residency to provide a foundation for a future career.⁹⁻¹¹ To help facilitate this goal, *Advances* will host a teaching case competition for members of North American radiation oncology residencies, beginning in September 2017. Details will be forthcoming.

- *Social Media for Radiation oncologists: A Practical Primer* (Altmetric score of 53)
- *The Big Data Effort in Radiation Oncology: data mining or data farming?* (Altmetric score of 42)
- *Oncoplastic Breast Surgery in the Setting of Breast Conserving Therapy: A Systematic Review* (Altmetric score of 26)
- *Patient-Reported Distress and Survival Among Patients Receiving Definitive Radiotherapy* (Altmetric score of 25)
- *Urinary Quality of Life Outcomes in Men Treated with Image-Guided Intensity-Modulated Radiation Therapy for Prostate Cancer* (Altmetric score of 15)

Figure 3 Top 5 articles as rated by Altmetrics in May 2017 (all within the top 5% of research output Altmetric scores).

Conclusions

As *Advances* concludes its second year of publication, we wish to encourage the ASTRO membership to continue its support of the journal through high-quality manuscript submission, participation in the peer review process, and highlighting important manuscripts through sharing on social media.

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