

Editorial

Outreach, Impact, and *Earthzine*

DO YOU remember what first excited you about ocean engineering? What keeps you coming back to your research laboratory or office, pursuing various aspects of ocean engineering assiduously day after day? Most of the research we do relates to areas that have a direct or indirect impact on the world we live in, i.e., our work is supposed to result in making the world a better place. However, this dream cannot be actualized by scientists and engineers alone. We need the support of the governments, policy makers, industry, and the common man to come together and act in small, but significant ways, based on our research findings, to make that dream come true. We need to make them active stakeholders and participants in the process of the change that we are trying to bring about.

The catch is that not all stakeholders of our dream read journal papers. Many only read popular articles about new findings and vistas being discovered by scientific research. That means that we need to enable them in joining our cause, by empowering them with accurate and current information about our research, written in a way that they can understand and appreciate—we need to write public outreach articles much more than we do now. When more gets written about the work we do, more buzz gets created and the public narrative on the topic begins to shift in the direction that research findings suggest. More public interest in our areas of work results in greater policy focus on and industry attention to these topics, often translating into increased funding options for the research itself. And above all these practical outcomes, is the lofty ideal of inciting more and more curiosity and inquiry around these topics in the minds of students, young, and old. This translates to another generation of well-informed citizens to continue our work in new and interesting ways. Therefore, every author has a direct interest in ensuring that his or her work is adequately and appropriately represented in the public narrative stream.

In addition to the above, there are practical, immediate benefits to doing outreach. The increased visibility from outreach can open new doors in terms of collaborations and connections. When scientists and researchers from other domains understand our work, they may be inspired to apply the ideas to solve problems that we may not be familiar with. This potentially leads to increased citations or cross-disciplinary research collaborations. The increased visibility also helps attract good students, employees, and co-workers, who help improve the impact of

our work further. Several grantors have recognized the long term benefits of outreach, and made it a deliverable of grants that they award. If you are the recipient of such a grant, doing outreach might directly contribute to the delivery of your project.

So what are the avenues for authors to do outreach without a large investment of time and effort?

Outreach can be undertaken in many ways. Authors could offer public talks on the work done, conduct laboratory visits, write blog articles about interesting research findings, publish short videos illustrating key ideas, organize nonspecialist workshops and events, or even publish popular science magazine articles or books. Talks, workshops, and similar events are excellent for personal engagement, but the number of people that they reach is typically small. The impact created is limited. On the other hand, popular science magazine articles, books, blog articles, and online videos reach a much larger audience.

One outreach avenue for authors to consider is *Earthzine*, a magazine of the IEEE Oceanic Engineering Society. *Earthzine* aims to provide up-to-date information on science and technology related to Earth observation, with the hope to educate and inspire. It accepts short-to-medium length articles for publishing, with a simple editorial process for quality control and improved readability. *Earthzine* is not a peer-reviewed technical publication, but instead works closely with the IEEE JOURNAL OF OCEANIC ENGINEERING to promote public awareness about the scientific articles published in the JOURNAL. Authors with papers accepted for publication in the JOURNAL are invited to write a short public summary for concurrent publication in *Earthzine*, with an aim to increase the visibility of the JOURNAL article and potentially leading to increased citations. Such articles may also help authors meet outreach obligations toward their grantors. For authors who do not write a public summary, if their article is open access, *Earthzine* may publish a copy of the abstract when the article becomes available on early access in IEEE Xplore. While this might direct a few interested readers to the full article, the impact of a well-written short public summary is likely to be significantly better. The short time it takes to write a summary articulating the key ideas in your article for the general public to understand and appreciate is time well spent, with clear benefits for you as well as for others.

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