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American Chemical Society Response to Plan S

As the world's largest scientific society dedicated to the advancement of the broader chemistry enterprise, the American Chemical Society (ACS) supports the widespread dissemination of high-quality research communications that report on scientific advances worldwide. With more than 150,000 members around the world, ACS is a leading not-for-profit membership organization, strategically focused on providing the global scientific community with access to chemistry-related information solutions through its multiple databases, peer-reviewed journals and scientific conferences. It is our mission as a learned society to support scientists in their professional development and scientific endeavors across all chemical sectors. We are committed to continuing to evolve our already robust open access (OA) program of offerings in a collaborative, transparent manner that enables researchers to continue publishing in the outlet of their choice, while also sustainably supporting a publishing enterprise that ensures the quality, reliability and preservation of the scholarly record. The high-value services we provide to authors, readers, and customers—including rigorous peer review led by practicing scientists, rapid time to publication, and web and mobile dissemination via a robust delivery platform that delivers more than 130 million article downloads to readers globally each year—are complemented by our active leadership of industry initiatives such as CHORUS, RA21, ORCID and CrossRef.

Through the Society's Publications Division, ACS currently publishes annually over 50,000 scientific articles across a portfolio of more than 50 peer-reviewed journals, which are among the most-cited, most-trusted and most-read within the scientific literature. The Society shares with the architects of Plan S many of their aspirations to enable open access to the research literature, and plays a critical role in the open access ecosystem. ACS Publications offers authors a range of flexible choices to publish open access, including operating all our subscription journals as hybrid publications with immediate or embargoed Gold OA licensing options, publishing two fully-OA journals, and engaging in direct arrangements with institutions and funders to directly sponsor article publishing charges on behalf of research authors. ACS authors have published more than 20,000 OA articles through these programs. Our new fully open access journal, *ACS Omega*, doubled its output to more than 2,000 articles in 2018. Two OA publishing initiatives begun in 2014, the award-winning *ACS Central Science*, and *ACS Editors Choice*, are free to both readers and authors through ACS sponsorship, and together have now published more than 2,500 OA articles, many of which are among the most highly read and cited in their fields. In addition to encouraging author self-archiving of accepted peer-reviewed manuscripts with institutional repositories via

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Green OA, ACS also recently organized and co-sponsors with other societies the digital preprint server *ChemRxiv*, to provide authors with the ability to archive and openly disseminate their research findings prior to peer review and publication. After publication, ACS also gives its published authors the ability to post and openly share links to their published articles, enabling free reader access to the final version of record, unrestricted after 12 months, as disseminated and archived online by ACS Publications.

This broad suite of OA options enables ACS authors to choose what best fits their needs, a key element we find missing from Plan S's proscriptive and restrictive proposed approach.

ACS' Concerns Regarding Plan S and its Proposed Implementation

Plan S's range and number of tenets, including its ambitious timetable for execution, present shortcomings that need to be remedied if the plan is to be practicable. As written, Plan S threatens the effectiveness of global scientific communication and as a result, could have negative unintended consequences for the advancement of science. To avoid such harm, Coalition S should engage with various stakeholders to identify constructive and sustainable solutions that will help the Coalition to achieve its objective of "full and immediate open access" to disclosed research results.

ACS's principal concerns with the proposed Plan S stipulations, and our recommendations to improve upon them can be summarized as follows:

1. Hybrid journals provide a clear path to achieving full and immediate open access—yet are considered 'non-compliant' by Plan S.

- Coalition S's disregard for the legitimate strength and role established hybrid journals play in an OA world threatens to compromise the scholarly research ecosystem. Subscription/OA Hybrid publishing can enable both longstanding brands and newly-established titles to provide authors and their funders with highly-trusted as well as cost-effective OA publishing avenues. Through hybrid titles, the publishing community can support the broad intent of Plan S without restricting the choice for researchers to publish in the journals they deem most appropriate for their scientific communities.

ACS encourages Coalition S to embrace hybrid journals as a legitimate mechanism for the delivery of full and immediate open access.

2. The role of digital preprints in open access should be embraced and included in Plan S.

- Digital preprint servers allow free and immediate access to and archiving of research findings, serving as important resources in the open communication ecosystem.

ACS encourages Coalition S to fully recognize the value these services play in delivering free access to research content. Posting of a preprint prior to peer review should be seen as sufficient for authors to be compliant with the OA requirements of Coalition S funders.

3. Restricting Plan S authors to a current small sub-set of established OA journals risks stifling scientific collaboration.

- An unintended consequence of Plan S in its current form is that it carries significant risk of stifling scientific collaboration among laboratories across the world, by imposing serious publishing limitations on researchers from a specific region (i.e. Coalition S funders in Europe). Rather than facilitating multinational teams, the constraints of Plan S could irreparably harm global scholarly collaboration.
- Even if Plan S results in stimulating the formation of new solely-OA journals or platforms across the science landscape, research authors other than those bound by Coalition S funder mandates will be reluctant to join them as co-authors in those unproven outlets in preference to journals with established reputations that offer (hybrid) OA publishing options.

Embracing hybrid journals as part of the Plan S solution would largely address this issue.

4. Clarity around transformative agreements is lacking.

- ACS is not opposed to the concept of transformative agreements, but we urge caution against a date-driven or inflexible approach, especially one mandating a commitment to flipping a given journal or publisher's business model to pure OA, without due regard for sustainability or market acceptance.

ACS encourages Coalition S to provide greater clarity on how transformative agreements can ensure sustainability of the publishing ecosystem.

5. Authors should have flexibility to choose the publishing license that best serves their needs.

- Providing flexibility on copyright and licensing terms would not hinder the primary goal of Coalition S to achieve free and immediate access to articles reporting on research findings. In fact, it would help to ensure authors that their works are used as intended, and not mis-used.

ACS encourages flexibility on licensing options, to allow options beyond CC-BY.

6. A one-size-fits-all approach to article publishing charges (APCs) is problematic.

- Reliance on APCs as a monolithic business model, particularly when combined with a requirement of CC-BY licensing terms, creates a "single point of failure" as an economic model, and could well have the unintended consequence of increasing publishing costs and disenfranchising authors from participating in their preferred journals. Moreover, the prospect of pricing caps on APCs fails to recognize the differences across the worldwide research communication and funding environment. A one-size-fits-all business model and pricing approach does not support a competitive marketplace, and would act as a disincentive for investment, and thus undercut innovation.

ACS encourages the preservation of flexible APCs that can allow for diverse business models, free market competition, and provide authors with a range of publishing choices.

7. The proposed timetable is impractical.

- Expecting initial implementation by January 2020 does not take into account the large practical and operational gaps in implementing the changes proposed by Plan S, which will ripple across multiple stakeholders and systems. While ACS supports the underlying goal of achieving universal access to published scientific articles, we are disappointed Coalition S funders did not consult broadly or effectively prior to announcing Plan S implementation guidelines.
- The compressed timeline for development, integration and market awareness outlined in Plan S does not allow for the needed input or adjustments. Defining full criteria for transformative agreements should include all of the many impacted entities— authors, institutions, libraries, funders and publishers. These groups can speak to the available resources involved, as well as the environmental factors that each journal faces in the transition to full OA.

ACS encourages Coalition S to recognize these challenges and to define a more realistic implementation schedule in consultation with stakeholders.

ACS is confident that solutions exist to our concerns, and we encourage Coalition S to begin to work with scholarly societies and other stakeholders to enable full and immediate open access to research communications in a sustainable way. If Coalition S proceeds without addressing the shortcomings in the initial Plan S implementation guidelines, it risks damaging the global scholarly communication environment, with irreparable unintended consequences for researchers and research progress globally.

We sincerely hope that Coalition S addresses the issues we have identified, and those concerns raised by the research community and other scholarly publishers, prior to final implementation of Plan S.