

# Diversification and Decentralization of Peer Review

## MODERATOR:

**Tony Alves**

HighWire Press

## SPEAKERS:

**Tony Alves****Daniela Saderi**

PREreview

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The speakers collectively presented a vision for transforming scholarly peer review, moving from an historically insular and slow process, which they describe as a conversation between privileged colleagues, to a more open, diverse, and efficient system. The overarching theme is a move toward greater inclusivity, transparency, and adaptability in how scientific knowledge is vetted and shared.

Richard Sever's presentation, "Decoupling Peer Review," lays the foundational argument for separating the act of disseminating research from its formal evaluation. He critically observes that the traditional model, where peer review *precedes* publication, introduces delays, often stretching from months to years. This bottleneck impedes the rapid sharing of scientific breakthroughs. Sever introduces preprints as a solution: unpublished manuscripts shared almost immediately, bypassing the sometimes lengthy traditional review process. He traces the origins of this concept to arXiv,<sup>1</sup> established in 1991, which pioneered the idea of a nonprofit, open access server for scientific preprints. Building on arXiv's success, Sever highlighted the emergence of discipline-specific preprint servers, notably bioRxiv<sup>2</sup> (2013) for biological sciences and medRxiv<sup>3</sup> (2019) for health sciences. The preprint platforms continue to grow, with bioRxiv and medRxiv collectively hosting over 350,000 preprints and attracting approximately 10 million views per month. Crucially, Sever notes that over 80% of these preprints are subsequently published in peer-reviewed journals, indicating their quality and eventual formal validation. The core goals of this "decoupling" are twofold: to accelerate scientific discovery and to stimulate the evolution of scholarly communication itself. By freeing dissemination from the strictures of prepublication peer review, preprints foster a dynamic environment for community discussion,

new forms of content verification, and a flexible approach to evaluation.

Complementing Sever's focus on the *what* and *why* of decoupling, Daniela Saderi's presentation, "Diversification and Decentralization of Peer Review: Community-led Preprint Review," delves into the *who* and *how*, particularly addressing issues of inclusivity and equity. Saderi directly confronts the inherent lack of diversity within traditional peer review, pointing out that senior editors, reviewing editors, and peer reviewers, often referred to as gatekeepers, are overwhelmingly male and predominantly from North America. This demographic imbalance raises serious questions about the fairness and comprehensiveness of the review process. A significant concern is the marginalization of early-career researchers (ECRs), who, despite often participating as co-reviewers, rarely receive formal recognition for their contributions, a phenomenon referred to as "ghostwriting."<sup>4</sup> This exclusion of diverse voices, including those from underrepresented regions or with lived experience, undermines the richness and depth of scientific evaluation.

PREreview,<sup>5</sup> the organization Saderi cofounded and leads, is presented as a direct response to these systemic issues. The platform functions as a preprint review hub, a resource center, and a convener, offering training programs focused on constructive and socially-conscious peer review. PREreview's open platform allows anyone with an ORCID iD to contribute feedback on preprints, which is then recognized and citable through the assignment of DOIs and CC BY 4.0<sup>6</sup> licenses. Innovative initiatives like "Live Reviews" facilitate collaborative, interactive peer review that can directly inform journal editorial processes, demonstrating the vision of community-led, diversified, and decentralized peer review. While Live Reviews are valuable, their practical implementation for widespread use is limited by the challenge of scaling them effectively. Saderi's overarching message is that achieving such a transformative shift requires a concerted community effort.

Wrapping up the session, the presentation by Tony Alves, "Mapping the Preprint Review Metadata Transfer Workflows," provides a practical framework for how this evolving ecosystem of decoupled and diversified peer review can function seamlessly. Alves emphasizes the critical need for interoperability tools to connect the various components of this new scholarly communication paradigm. The presentation details the collaborative efforts between

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Europe PMC and ASAPbio to establish technical elements and best practices for metadata transfer, aiming to guide new preprint review groups and encourage adherence to evolving standards.

The ecosystem for metadata transfer is complex and multifaceted, encompassing content records, established scholarly communication standards, a diverse array of platforms (e.g., preprint servers, review platforms, commenting tools), metadata registration agencies, repositories, indexers, and various APIs. To ensure efficient and reliable data flow within this intricate network, several key protocols, schemas, and standards are vital. Much of the content covered in this detailed presentation was previously posted as a preprint,<sup>7</sup> and shared through two articles<sup>8,9</sup> published in *Science Editor*.

The speakers shared a comprehensive picture of a scholarly communication system in flux, driven by technological innovation and a desire for greater equity and efficiency. From Richard Sever's case for decoupling dissemination from evaluation through preprints, to Daniela Saderi's advocacy for diversifying and decentralizing peer review through community-led initiatives like PREreview,

and finally to Tony Alves's practical blueprint for ensuring seamless metadata transfer across this complex ecosystem, the message is clear: the future of peer review is open, collaborative, and interconnected.

## References and Links

1. <https://arxiv.org/>
2. <https://www.biorxiv.org/>
3. <https://www.medrxiv.org/>
4. McDowell GS, Knutsen JD, Graham JM, Oelker SK, Lijek RS. Research culture: co-reviewing and ghostwriting by early-career researchers in the peer review of manuscripts. *eLife*. 2019;8:e48425. <https://doi.org/10.7554/eLife.48425>.
5. <https://prereview.org/en-us>
6. <https://creativecommons.org/licenses/by/4.0/deed.en>
7. Alves T, Erdmann C, Esten E, Klein M, Kramer B, Levchenko M, Nip D, Parkin M, Puebla I. Mapping the preprint review metadata transfer workflows. *MetaArXiv*. <https://doi.org/10.31222/osf.io/yu4sm>.
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