STM Research Consulting

Safeguarding Scholarly Communication

Publisher Practices to Uphold Research Integrity

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Commissioned by STM's Research Integrity Committee

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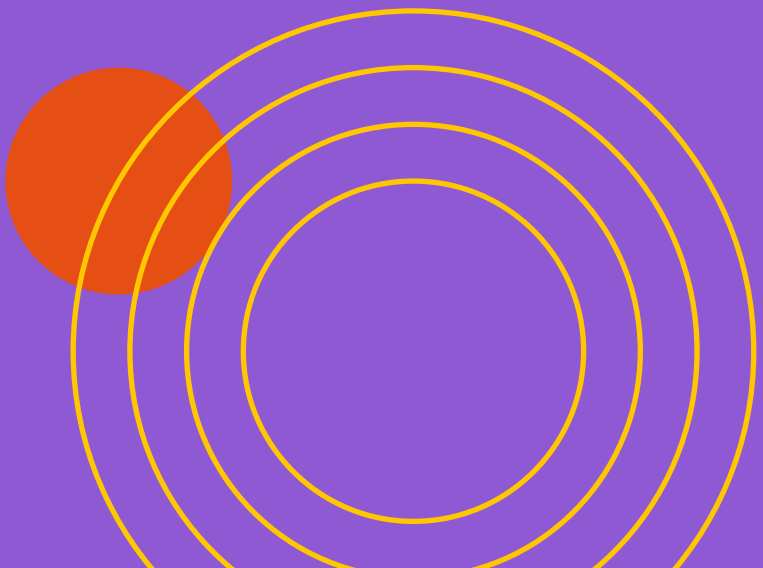
Contents



Foreword

The integrity of the scholarly record has never mattered more. Research findings inform clinical decisions, shape policy, and guide technological developments.

At the same time, the way the research is done and communicated underpins public trust in science. When that integrity is compromised, whether through honest lapses, individual oversights, or intentional breaches, the consequences can extend beyond any single publication. Thus, maintaining the trustworthiness of scholarly communications is a fundamental responsibility, one that requires innovation and sustained commitment from publishers, and alignment across stakeholders.

The research and publishing landscape has transformed dramatically over the past decade. Researchers work with research publishers to communicate more good research, now more openly than ever before. But the shadow cast by the activities variously described as 'paper mills' has served as a major call to action: what was once managed through trust and reactive intervention when needed now requires systematic and proactive approaches that we could not have imagined before.

Rising to these challenges is both inspiring and important. Publishers have responded by building substantial infrastructure: investing heavily in people and technology, coordinating cross-industry intelligence sharing, and creating education programmes that reach authors, editors, and reviewers. Innovators have created and launched new services. AI promises us all further benefits. This response and continued evolution is transformative, and reflects our commitment to staying ahead of emerging challenges that span borders and institutional boundaries.

This report documents how publishers across the community, from major commercial operations to society publishers and emerging new publishing communities, are working to safeguard scholarly communications. What emerges is a picture of significant capacity building and increasingly sophisticated approaches to both detecting and preventing breaches. The progress achieved so far demonstrates what focused investment and collective commitment can accomplish. And we're not finished: there's more to come.

Yet, we recognise that these challenges cannot be solved by publishers alone. The systemic pressures that create opportunities for integrity breaches require solutions that extend well beyond publishing infrastructure. This is why partnership sits at the heart of our approach. Through collaborative initiatives like the STM Research Integrity Committee (which commissioned this report), the STM Integrity Hub, COPE, and United2Act, we are contributing to building shared capabilities that benefit the entire sector and ensure that all actors can access the needed detection tools and expertise.

The infrastructure and practices documented in this report represent a robust foundation for ongoing work. Our commitment remains clear: to continue refining our approaches, extending capabilities across the publishing landscape, deepening partnerships with all stakeholders, and maintaining the agility needed to respond as new challenges emerge. Working together, we can maintain the quality and trustworthiness of the scholarly record that society depends upon.

Chris Graf, on behalf of the STM Research Integrity Committee

1. Introduction

1.1 Background

Few issues have disrupted scholarly communication as profoundly as research integrity breaches and the publication of fraudulent content. Traditionally, research integrity in scholarly publishing was largely a matter of trust and reactive intervention.

Editors flagged problems identified in submissions, peer reviewers caught errors, and the occasional retraction addressed relatively clear-cut breaches of integrity. Today, publishers are screening millions of submissions with sophisticated detection systems and dedicated teams, coordinating cross-industry intelligence (while maintaining independent decision making), and investing in educational programmes across the research ecosystem. This is especially important in light of growing publication volumes: 5.7 million articles, reviews, and conference papers appeared in 2024, up from 3.9 million just five years earlier (using data sourced from Dimensions, an inter-linked research information system provided by Digital Science).

This transformation has been driven by changes in the nature and scale of potential breaches. Where issues once emerged through individual lapses in judgement and sporadic intentional manipulation, they now emerge from large-scale operations selling manufactured manuscripts, AI systems capable of generating plausible but fabricated research, and coordinated networks that span journals and borders. The publish-or-perish pressures that have long shaped academic careers are being systematically exploited by actors who have industrialised these breaches. While detection and enforcement are essential, lasting solutions require addressing the evaluation and incentive systems that create pressure to publish at any cost.

The stakes extend beyond publishing itself. When integrity breaches corrupt the scholarly record, the consequences ripple through grant decisions, policymaking, clinical practice, and public trust in science. While the causes of misconduct are diverse, they have collectively prompted a fundamental shift in the role publishers play in safeguarding that trust. This report examines how publishing practices and policies have evolved to meet these challenges.

1.2 About this project

Addressing today's research integrity challenges requires coordinated action across the research ecosystem (see Figure 1). Publishers lead by implementing and enforcing publishing ethics and editorial standards and are active partners in the broader research integrity ecosystem, collaborating with institutions, funders, policymakers, and researchers. Whilst this report focuses on the role of publishers, research integrity ultimately depends on all these stakeholders fulfilling distinct but interconnected responsibilities.

Efforts to reform research evaluation and incentive structures – championed by initiatives such as the San Francisco Declaration on Research Assessment (DORA) and the Coalition for Advancing Research Assessment (CoARA) – are essential complements to the integrity-focused work shown in Figure 1.

Figure 1
Internal and collaborative responsibilities of the key stakeholders in the research integrity landscape.

In this context, STM's Research Integrity Committee commissioned Research Consulting to document how publishing organisations are working to safeguard scholarly communications. This project aimed to capture the diversity of approaches being deployed across publishers around three focus areas:

Figure 2: Three focus areas the project aimed to capture.

This report synthesises insights from 18 research integrity and publishing experts across 13 organisations, ranging from major commercial publishers to society and community-based publishers (see Appendix A). This report includes quotes from these conversations as well as anonymised case studies that illustrate the breadth and depth of the efforts being put into place.

The findings highlight both the substantial progress the sector has achieved and areas for continued development. What emerges is a story of increasingly sophisticated capabilities to address increasingly sophisticated threats, with the recognition that lasting solutions require deeper and sustained collaboration with institutions, funders, and researchers themselves.

1.3 Acknowledgements

We gratefully acknowledge the leadership provided by Leila Jones (Chief Operating Officer, STM), alongside the project's advisory group members: Coromoto Power Febres (Research Integrity Manager, SAGE Publishing), Luigi Longobardi (Director of Publishing Ethics and Conduct, IEEE), Miriam Maus (Chief Publishing Officer, IOP Publishing), and Sarah Jenkins (Director, Research Integrity & Publishing Ethics, Elsevier).

We are also thankful to the broader STM Research Integrity Committee, including Chair Chris Graf (Research Integrity Director, Springer Nature), for their input, as well as to all interviewees who participated in our consultation (see Appendix A).

Finally, we acknowledge the input and feedback provided by Siân Harris and James Butcher in the development of the present report.

2. Upholding the integrity of the published record

2.1 Capacity

Detecting integrity breaches at the volume and sophistication seen today requires dedicated expertise and systematic screening capabilities.

This section examines how publishers have built the human and technological infrastructure needed to address research integrity concerns – from specialist teams to detection tools and collaborative platforms.

Deploying dedicated research integrity teams

With growing numbers of publications and the escalating sophistication of breaches, many publishers recognised that editorial teams were not best placed to oversee research integrity concerns. As a result, publishers began investing in research integrity teams, acknowledging that this area of work now needs dedicated attention and a specific skillset:

> *"Things get resolved more quickly when it's somebody's full-time job to focus on research integrity. The knowledge is stored centrally and can be applied consistently."*

Most dedicated research integrity teams started small, consisting of two or three staff members with mixed backgrounds in editorial work or academic research. Some larger publishers now have teams exceeding 100 people, spanning screening, investigation, technology development, and education functions.

Smaller publishers, which often cannot deploy dedicated or larger teams, are able to access knowledge and skills through COPE and the STM Integrity Hub (see Section 2.3), showing how these forums can help ensure that provision is robust across the sector:

> *"Being able to really develop relationships and hear from colleagues in this space and learn from them and from what their systems have told them is advantageous to us as well."*

CASE STUDY

Building human and digital infrastructure from the ground up

One interviewee described how their research integrity team grew from a handful of staff to dozens of members, one of the biggest in the industry. The team was established in 2016, a time when roles like "research integrity specialist" were unheard of.

> *"I joined in late 2016 and we were only two or three people in the team at that time. We were creating everything from scratch."*

The publisher also developed a proprietary tool for integrity screening. The in-house approach allows the team to train the system on their data and deploy new checks when investigations identify emerging threats.

In 2021, the team was expanded to include an auditing subunit. This unit focuses on pattern detection across journals and disciplines. Auditors identify networks of problematic submissions spanning multiple journals.

Today these components work together as an integrated system. Specialists conduct submission checks at the paper level, auditors identify cross-journal patterns and networks, and investigation outcomes are fed directly back to the technology team to develop new detection capabilities.

The growing role of technology in screening and monitoring

Today, publishers invest in technology stacks and systems that enable systematic screening, which would not be possible manually. This includes off-the-shelf commercial tools, in-house solutions, as well as collaborative non-commercial applications that some publishers are tailoring to their workflows. These systems work by considering multiple signals of potential breaches of research integrity to identify concerning submissions that warrant scrutiny. Importantly, submissions are often screened across the publication workflow to catch problems and identify signals that might be introduced at different stages.

As a large publisher highlighted, the scale of these efforts is significant:

> *"We have just designed and launched a brand new tool. In 8-9 months, we have screened more than two million submissions."*

Other publishers, particularly smaller organisations, have focused on strategic use of third-party tools and collaborative infrastructure. This approach offers agility, as publishers can adopt new tools as they are made available by vendors:

> *"We're constantly trialling tools from third party vendors. The plus side of it is it's very agile. If there's a better alternative, we can move very quickly. We're not obliged to stick with our own in-house tools."*

During the consultation, publishers emphasised that the use of technology augments rather than replaces human judgement. In practice, submissions flagged for multiple concerns by tools still need human assessment to determine whether signals indicate genuine problems:

> *"It's our humans on the ground who are exceptionally qualified and experienced. Tools are tools, not a replacement for making editorial judgments."*

Managing false positives remains an area for further development, as publishers must balance sensitivity (to catch potential problems) with specificity (to avoid excessive numbers of false positives that create unsustainable workloads).

CASE STUDY

Integrated screening across the publication workflow

One publisher described the development of a screening approach that combines multiple detection tools at strategic points throughout the submission process. Rather than relying on a single technology, the publisher implemented a suite of complementary tools including identity verification, scope checkers, machine-generated content detection, paper mill pattern recognition, retraction analysis for both authors and references, peer review cycle monitoring, image screening (using Imagetwin), and cross-publisher intelligence sharing through the STM Integrity Hub.

The screening operates at three distinct touchpoints, augmenting rather than replacing human judgement: initial submission, manuscript revision, and a final check before acceptance. This staged approach recognises that different integrity concerns become detectable at different points in the workflow (see Section 2.2).

> *"It's not just this team that protects us from research integrity risk. It is every step of the publishing process and we really need people to be able to recognise when something is going wrong and bring it to us quickly."*

The implementation required collaboration between two specialised teams: a solutions-focused group that developed and procured screening tools and a workflow integration team that embedded these capabilities into the publisher's submission platform.

2.2 Practice

Infrastructure alone does not safeguard the scholarly record – it must be deployed effectively and consistently across the publication workflow.

This section examines how publishers operationalise their technical and human capabilities: establishing clear standards, screening submissions at critical checkpoints and building awareness through education and training.

Setting standards and expectations

Publishers establish integrity expectations through structured frameworks that guide authors, editors, and reviewers. Most base their approaches on shared standards from COPE, discipline-specific bodies (e.g., ICMJE for medical journals), or other sectoral guidance, adapting these to their operational contexts.

> *"Our research integrity policy is primarily based on COPE guidelines. We very much hang our hat on these."*

Author guidelines are used as the first point of contact, to communicate expectations around research integrity and publishing ethics to researchers. The effectiveness of these guidelines depends on three factors: specificity (journal-specific guidance rather than generic references), adherence (editorial verification of adherence), and education (raising awareness and supporting compliance).

Authorship requirements are an important part of author guidelines and have received significant attention in recent years. Many publishers now require corresponding authors to confirm that all listed authors meet authorship criteria (substantial contributions to conception, data collection, analysis, or writing), and that contributors are appropriately acknowledged. CRediT (Contributor Roles Taxonomy) is increasingly adopted to document these contributions systematically. Author verification protocols are being adopted at scale to strengthen transparency and accountability. ORCIDs are especially common, with over 7,000 journals now collecting these to enable disambiguation between researchers with identical names and facilitate record linkage when authors change names. Some publishers also require institutional email addresses and links to institutional profiles.

The development of standards is described as active and ongoing. Publishers emphasise that policies cannot be static documents applied uniformly across all contexts; instead, they must be adapted and updated in response to changes in the external landscape. When new integrity challenges appear (whether through technological advances, changing submission patterns or novel exploitation tactics), there is a need for mechanisms to develop responses rapidly whilst ensuring that these are evidence-based and monitored for effectiveness.

CASE STUDY

Responsive policy development

An interviewee described how they encountered a rapid increase in submissions using a specific type of publicly available datasets over a short time period. This surge included low-quality papers with suspected integrity breaches.

They didn't have an existing policy for these "fast-turn science" submissions. The team drafted guidance specifying validation requirements and quality expectations before implementing initial screening checks to reject papers not meeting standards before peer review.

The interviewee noted that the key to the policy's success was ensuring that the policy rollout was accompanied by evaluation metrics. The team monitored whether submission patterns changed, whether paper quality improved, and whether rejection letters provided clear guidance to help authors understand their new requirements.

"When we create a new policy or a new initiative, it has to have clear success metrics and how we want to monitor that it works, that there is uptake. We try and close the loop with the authors as well."

Screening across the publication lifecycle

Publishers have moved from reactive integrity checks to systematic screening at multiple points in the publication workflow. This recognises that different types of problems emerge (or become detectable) at different stages (see Figure 3).

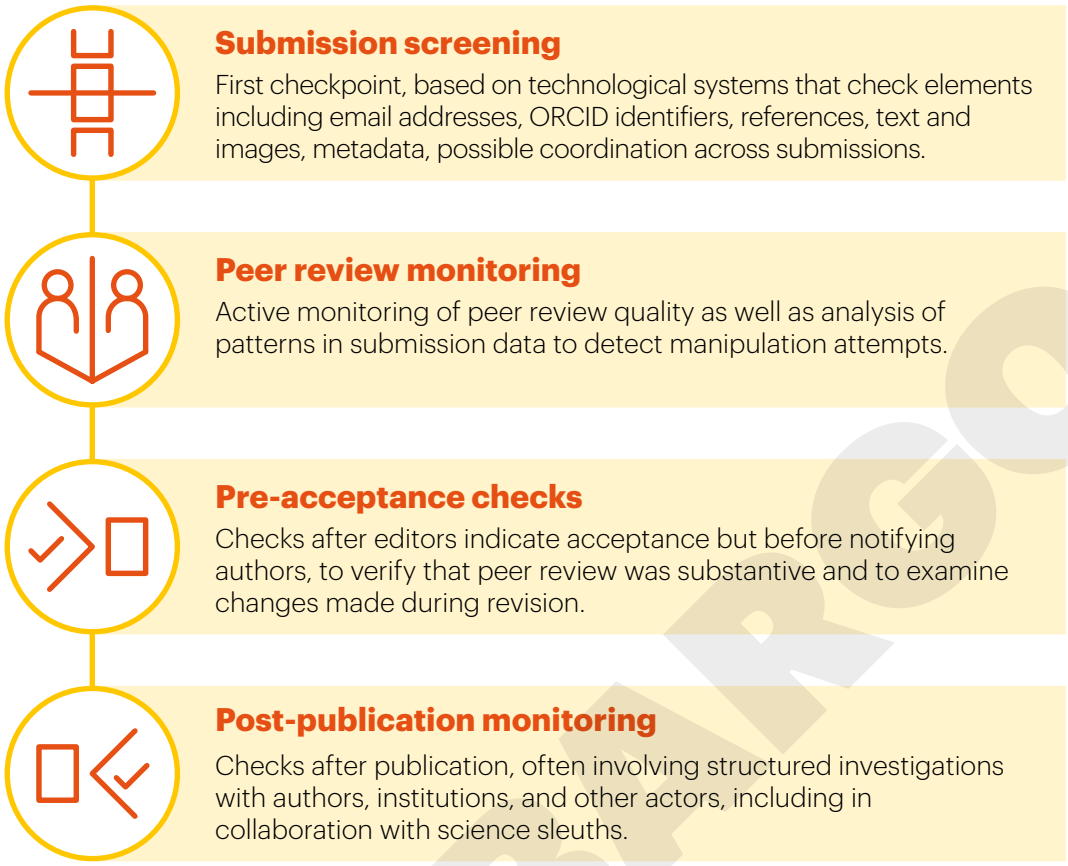
Post-publication monitoring benefits from the input of the broader community, including research stakeholders and beyond. Detection of possible breaches may come through multiple pathways:

- Direct communication: Dedicated integrity mailboxes receive concerns from readers, authors, institutional research integrity officers, and other publishers.
- Public forums: Platforms like PubPeer have become increasingly important sources. Some publishers actively monitor PubPeer comments using journal-level alerts or browser plugins that flag when papers receive comments.

"We pay close attention to those comments because we have a firm belief that, anonymous or not, a comment raised is an allegation worth investigating."

- Social media: Platforms where researchers congregate (PubPeer, X, Bluesky) can surface integrity concerns. Publishers describe monitoring relevant hashtags and discussions, though the decentralised nature of social media makes systematic surveillance difficult.

Figure 3: Screening of submissions across the publication workflow.



The volume of post-publication concerns varies significantly across publishers and disciplines, which highlights differences in how research integrity issues are identified, investigated and resolved. The Retraction Watch Database, now integrated into Crossref's infrastructure following its recent acquisition, provides transparent information to monitor retractions and expressions of concern. This integration positions integrity metadata alongside publication metadata, strengthening the infrastructure for tracking and responding to post-publication issues across the scholarly record.

Investigation and correction

When concerns arise, whether pre-publication or post-publication, publishers follow structured investigation processes and protocols developed through COPE guidance and tailored to their contexts. These investigations typically involve gathering evidence, consulting with editors, contacting authors and institutions, and, finally, determining appropriate outcomes:

> *"Some cases are very nuanced and there's a lot of context. We have clear standard operating procedures and guidelines that you normally follow, but there's also a component of flexibility."*

Investigation timelines vary substantially depending on case complexity. Plagiarism cases where evidence is clear might resolve within weeks. Complex cases involving multiple authors, disputed facts or institutional investigations can extend over months or years. Publishers navigate these tensions while operating under legal and privacy constraints that shape what can be disclosed and when.

> *"There is no standard timeline. It varies completely from case to case."*

The challenge lies in balancing competing demands: speed matters for maintaining confidence and preventing problematic content from informing future research, but accuracy matters more given the impact of corrections and retractions. The consequences of corrections and retractions extend beyond individual researchers in systems that rely heavily on publication metrics: this reality underscores the need for evaluation frameworks that consider research quality and integrity alongside productivity.

Education and capacity building

Training and support programmes have grown substantially, targeting authors, editors, and reviewers with different needs and delivery formats. These programmes recognise that preventing integrity breaches requires building awareness and capabilities throughout the research ecosystem.

Training programmes vary in format and focus. Some organisations have developed online learning platforms with self-paced modules; others focus on live workshops and webinars allowing Q&A and discussion of real cases. Larger publishers often maintain both formats:

> *"We recently introduced a new training programme for onboarding editors, which includes ethics as well. Research integrity is one of the primary focuses for onboarding editors. We also have author workshops, and education materials for early career researchers related to research integrity and ethics."*

Smaller publishers pursue more targeted approaches, such as quarterly webinars for editors and one-to-one outreach sessions, leveraging the closer relationships they often maintain with their editor communities.

Training content has evolved as integrity challenges have changed. Early programmes focused on plagiarism recognition and proper attribution. Today's training increasingly addresses AI-generated content, data integrity, image screening, author identity verification, and hallmarks of paper mill submissions:

> *"If we notice a new trend in what paper mills are submitting, we'll write to the editors and say: 'We've noticed an increase in this kind of submission, and you should monitor this carefully.'"*

Community outreach extends beyond publishers' own author and editor networks. These programmes include conference presentations, webinars open to the broader research community, and in-person workshops delivered at research institutions.

These activities reflect a strategic shift in how publishers conceptualise their role: not merely managing submissions but contributing to strengthening good practices through dialogue and capability development.

Publishers recognise that education initiatives, while valuable, cannot alone counteract systemic pressures. Training researchers in integrity practices must be complemented by reward and recognition structures that value rigorous, reproducible research rather than simply maximising publication counts or external perceptions of impact.

CASE STUDY

Investing in reviewer training

One of the participants we spoke to told us about how they developed a dedicated training programme to strengthen peer reviewer capabilities across its portfolio. Thousands of researchers have completed the programme since its launch. Through free workshops, they teach reviewers how to provide constructive feedback and recognise ethical concerns during manuscript assessment. The programme highlights that research integrity is integral to thorough peer review rather than a separate exercise.

The publisher views this as an infrastructure investment rather than as an optional enhancement. They committed substantial resources to developing high-quality materials and maintaining the programme over multiple years.

The interviewee remarked that trained reviewers do raise integrity concerns when appropriate and that they provide valuable input that often complements automated detection mechanisms.

> *"We have invested a great deal of time, effort, and money into producing these workshops and it means that we're setting up our reviewers for success more generally speaking, but also to detect all right issues."*

2.3 Collaboration

While publishers are working individually to uphold research integrity, they also collaborate with other publishers and other stakeholders in the research ecosystem, while respecting competition and antitrust laws.

As shown in Figure 1, this recognises that no one actor can address the scale of today's research integrity challenges on their own. In this section, four key collaborative initiatives are discussed.

Building a collective response

Publishers frequently describe informal exchanges, shared problem-solving, and willingness to learn from each other's experiences. This open and collaborative culture manifests in all interactions, as publishers share challenges and solutions and set up bilateral communication when coordinated cases arise.

> *"In the last few years, the relationships between publisher research integrity teams have strengthened so much. And the industry is better for that: the sharing of expertise, sharing of technology. There's been a real change in how much we collaborate, and I think it's for the better of the ecosystem overall."*

This collaborative culture also benefits tool development: publishers describe how they provide feedback to technology vendors, participate in pilot programmes for new detection methods and share insights about what works and what doesn't:

> *"It would be absurd to think that a single publisher would have the solution to preventing breaches of integrity. It is a shared problem, and we need to have a collective solution."*

The recognition that research integrity is a shared responsibility also enables capabilities that would be impractical or impossible for individual organisations:

- Cross-publisher pattern detection reveals coordination that would appear as disconnected incidents to individual organisations.
- Faster threat response means intelligence about new tactics spreads quickly, allowing publishers to adapt processes before being targeted rather than discovering threats independently.
- Standardised approaches create consistency across the sector, benefiting authors, editors, institutions, and readers who can develop shared expectations for how integrity breaches get handled.

The STM Integrity Hub: Shared technological infrastructure

With 49 organisational members, the STM Integrity Hub represents one of the sector's most significant collaborative infrastructure investments to support research integrity. Launched to enable cross-publisher detection and information sharing, the Hub provides tools and capabilities that depend on multi-publisher participation.

Several publishers have donated some of their technology to the Hub, recognising that a degree of coordination would serve the sector more effectively than siloed tools. Both Elsevier and Springer Nature, for example, have contributed detection technologies that were developed internally. These technologies complement open-source software developed by the research community, and integrations with several third-party tools and databases.

In practice, the Hub's effectiveness scales with participation: each additional publisher strengthens detection capabilities for all participants, creating powerful network effects that incentivise broad engagement. Each publisher determines how to use the information the Hub provides and makes its own independent decisions.

COPE: Shared ethical frameworks

A long running initiative in the sector, the Committee on Publication Ethics (COPE) establishes shared ethical standards and guidance that publishers as well as other stakeholders adopt as foundational frameworks. At present, COPE has 106 publisher members, representing a total of over 14,500 journals, as well as 65 corporate and 81 individual members. COPE's flowcharts for handling different types of misconduct and evolving best practice recommendations create common ground across the sector, ensuring similar cases receive consistent treatment regardless of where they occur.

COPE's value extends beyond published guidance. Forums and working groups provide spaces where integrity practitioners can discuss challenging cases and develop consensus on appropriate responses. These discussions occur under Chatham House rules, enabling frank conversation about difficult situations without public attribution:

> *"We have the COPE forums where people bring up cases because they are complicated, because there's not a clear-cut answer."*

Publishers with more limited resources particularly value COPE's role in distilling sector knowledge into accessible guidance. Smaller organisations often lack capacity to monitor evolving best practices independently but can adopt COPE standards, confident that they reflect sector consensus. This levelling function ensures integrity standards don't fragment based on organisational size or resources—a critical consideration in a sector where publisher capabilities vary enormously.

An important strength of COPE lies in its diverse membership, which welcomes journals, publishers, universities, research institutions, and individual practitioners. By bringing together stakeholders who might otherwise operate in silos, COPE creates bridges that enable knowledge exchange across organisational boundaries. This is why universities frequently cite it as an essential resource for training, development, and shared learning.

United2Act: Coordination against paper mills

United2Act represents another collaborative effort to bring together a set of 58 organisational signatories, including publishers, institutions, technology vendors, and more to coordinate responses to industrial-scale paper mill operations (United2Act also includes a small number of individual signatories). The initiative was started in 2023 with the support of STM and COPE.

Phase one of United2Act consisted of five working groups that focused on distinct challenges: increasing education and awareness; improving post-publication corrections; catalysing research on paper mill operations; developing trust markers; and facilitating dialogue between stakeholder groups. This approach enables concrete progress on defined problems rather than attempting to simultaneously address all challenges in a landscape that is shifting rapidly. The initiative also performs an important awareness-raising function, making the scale and sophistication of paper mill operations visible to all scholarly communication stakeholders.

Phase two of United2Act launched in September 2025 with a further two years of outreach covering three main areas: Education, Stakeholder responsibilities, and Funder outreach.

Think. Check. Submit.: Guidance for researchers

Think. Check. Submit. is an international initiative designed to help researchers identify trusted journals and publishers for their work and avoid deceptive or predatory publishing practices. The initiative provides a checklist and practical resources that guide authors in evaluating the credibility of journals and publishers before submitting their manuscripts. Its aim is to promote research integrity, educate researchers about publishing choices, and build trust within scholarly communications. Think. Check. Submit. does not offer a definitive or 'approved' list of journals; rather, it empowers authors through critical self-assessment.

The initiative is supported by key representative bodies across the publishing landscape, including the Association of Learned and Professional Society Publishers (ALPSP), the Association of University Presses (AUPresses), the Committee on Publication Ethics (COPE), the Directory of Open Access Journals (DOAJ), the ISSN International Centre, the Association of European Research Libraries (LIBER), the OAPEN Foundation, Open Access Scholarly Publishers Association (OASPA), the International Association of STM Publishers (STM), and UKSG. It is also supported by the library-led Austrian Transition to Open Access Project (AT2OA).

Working with science sleuths

Beyond formal collaborative initiatives, a distinct community of independent investigators, often called science sleuths, has become an increasingly significant presence in the research integrity landscape. These individuals systematically screen published literature for indicators of manipulation, fabrication, or other integrity concerns, sharing findings through platforms like PubPeer, personal blogs or direct communication with publishers.

The relationship between publishers and sleuths is evolving, with the latter being increasingly recognised as complementary to publishers' own efforts. Several interviewees described constructive working relationships:

> *"When we receive information from a sleuth, we collaborate with them and make use of their skills. The work they've already done becomes part of our own investigation. I see that as a positive."*

This collaboration can take various forms, as some sleuths work openly, whereas others operate anonymously. Publishers differ in how they engage: some have established dedicated channels for receiving concerns identified by sleuths, while others respond on a case-by-case basis.

At the same time, some tensions persist in how publishers and sleuths co-exist. Public disclosure of concerns before publishers have completed investigations can create pressure and reputational consequences for authors who may ultimately be exonerated. Conversely, sleuths sometimes express frustration with the pace of publisher responses or perceive insufficient transparency about the outcomes of investigation. Navigating these dynamics requires mutual understanding of constraints: publishers operate under legal and procedural requirements that shape timelines, which are not visible to external stakeholders.

Looking ahead, the sector may benefit from clearer frameworks for engagement, not to formalise or co-opt independent scrutiny, but to ensure that the substantial expertise sleuths bring can be channelled most effectively.

3. The path forward

The research integrity landscape is being fundamentally reshaped.

Publishers have built dedicated teams, deployed screening technologies and established a growing range of collaborative infrastructure enabling cross-sector coordination. These capabilities represent investments that would have seemed impractical ten years ago but have become essential today. This foundation creates new possibilities. The question is no longer whether publishers should invest in integrity infrastructure – that necessity is established – but how to extend these capabilities across a diverse publishing landscape and how to amplify their effectiveness through deeper partnerships with other stakeholders.

From reactive correction to proactive prevention

Publishers' efforts are shifting upstream, catching problems before publication rather than correcting the published record. This strategic shift reflects both operational maturity and evolving expectations from researchers, institutions, and funders who expect greater transparency in how concerns are handled. Continuing this shift will require agility from publishers: the ability to deploy new detection methods rapidly, update policies in response to emerging threats and share intelligence about new tactics before they become widespread. The dynamic nature of this landscape is a defining characteristic: as image manipulation and text generation capabilities evolve, so too must approaches to detection. Several approaches have been proven to work and warrant expansion and acceleration (see Figure 4).

Making progress together

Over the past decade, coordinated action across the research publishing community has demonstrated what collective commitment can achieve. Cross-publisher intelligence sharing has made it possible to identify patterns and behaviours that remain invisible to individual organisations. Partnerships between publishers, institutions, and funders have enabled investigations that none could have undertaken independently. Shared frameworks and analytical tools have strengthened the sector's overall capacity to uphold research integrity.

While publisher capabilities have advanced substantially, the persistence of integrity breaches reflects deeper systemic issues. Evaluation practices that prioritise publication volume over quality, coupled with limited capacity to verify research integrity during hiring and promotion decisions, create conditions where problematic behaviours can flourish. Addressing these root causes requires publishers to work alongside institutions and funders to reform incentive structures and explore how publisher data might inform more nuanced evaluation of research contributions.

Building on this foundation, the opportunity now lies in extending proven models across a broader share of the publishing landscape. This includes ensuring that smaller publishers can access advanced detection and analytic capabilities, formalising collaboration protocols with institutions, expanding education and training through cross-sector partnerships, and maintaining operational agility as breaches emerge.

The infrastructure established over the past decade provides a robust foundation for continued progress, and publishers are refining detection methodologies and aligning more closely with institutional and funding partners to safeguard the quality and reliability of the scholarly record. At the same time, there are ongoing investments in conceptualising and developing novel approaches to safeguarding research integrity in a future where AI makes it increasingly easy to fabricate content, for example in the area of identity verification and image integrity.

This remains an ongoing endeavour—not a challenge that can be permanently resolved, but one that the community is increasingly well-equipped to address through sustained innovation and shared accountability.

Figure 4: Collaborative approaches to uphold high levels of research integrity.

Collaborative infrastructure is delivering results

The STM Integrity Hub, COPE, United2Act, and Think. Check. Submit. demonstrate what becomes possible when stakeholders work together. These initiatives currently engage a substantial but still limited proportion of the sector's thousands of publishers globally. Extending collaborative benefits to smaller publishers and those operating outside major publishing centres represents a significant scaling opportunity. The technical infrastructure exists, and the way forward requires increasing participation and knowledge transfer.

Education is building long-term resilience

Publishers consistently emphasise training and outreach as strategic priorities: helping researchers understand good practice, training editors to recognise red flags earlier, and equipping reviewers to identify sophisticated fraud. Prevention through education represents a long-term investment with diffused benefits that may not show immediate returns, but it addresses root causes. Early results from reviewer training programmes and author workshops suggest untapped potential in capability-building across the ecosystem.

Cross-sector partnerships are maturing

Publisher-institution collaboration has never been stronger, yet there is room to improve coordination in investigations. The infrastructure for information sharing largely exists, and efforts should focus on making these partnerships more systematic and responsive. Similarly, funders and policymakers are increasingly engaged with integrity challenges, and translating this attention into coordinated action represents a near-term opportunity.

Technology continues to create leverage

Screening tools that were experimental five years ago are now production systems processing millions of submissions. The next generation of detection capabilities, including pattern recognition across publishers, AI-assisted investigation tools, and identity verification systems, is already in development. The challenge is ensuring that advances remain accessible to organisations of all sizes and that human judgment remains central to decision-making.

Appendix A. Project contributors

The following stakeholders contributed to this project.

Name	Organisation	Role
Alice Henchley	Springer Nature	Director of Communications, Integrity, Ethics, and Editorial Policy
Catriona Leslie	Frontiers	Research Integrity Audit Manager
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Elena Vicario	Frontiers	Head of Research Integrity
Gráinne McNamara	Karger Publishers	Research Integrity / Publication Ethics Manager
Jennifer Wright	Cambridge University Press	Head of Publication Ethics and Research Integrity
Johan Rooryck	European Diamond Capacity Hub	Co-Coordinator
Joyce Griffin	Wiley	Director, Research Integrity Operations
Lauren Flintoft	IOP Publishing	Research Integrity Manager
Marie Souliere	Frontiers	Head of Publication Ethics and Quality Assurance
Melanie Slavitch	Canadian Science Publishing	Director of Integrity and Engagement
Mike Streeter	Wiley	Director of Research Integrity Strategy and Policy
Olivia Nippe	Elsevier	Senior Publishing Ethics Expert
Peter Hatch	Thieme	Senior Director of Strategic Operations
Sabina Alam	Taylor & Francis	Director of Publishing Ethics and Integrity
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