

Written Testimony of

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For the hearing titled “The State of Scientific Publishing: Assessing Trends, Emerging Issues, and Policy Considerations”

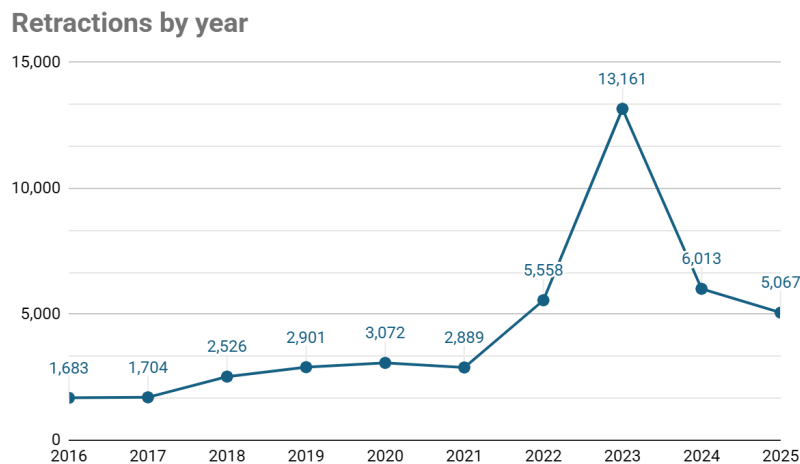
April 15, 2026

Chairman McCormick, thank you for the opportunity to speak with the Subcommittee today about this important topic. I represent Retraction Watch,¹ a news outlet covering retractions, corrections and other events in scholarly publishing. Founded in 2010, its parent non-profit organization is The Center For Scientific Integrity, based in New York. In 2018, Retraction Watch launched the world’s most comprehensive database of retractions, the Retraction Watch Database.² That database now contains more than 64,000 retractions and is part of Crossref.

In my oral remarks and in this written testimony, I will draw from our reporting and the Retraction Watch Database, as well as other sources, to review trends in scientific publishing.

Retraction Trends

Retraction rates have risen from 0.02% of articles in the early 2000s to about 0.2% today, in large part because of greater scrutiny. The following graph shows trends in retractions for the last decade:



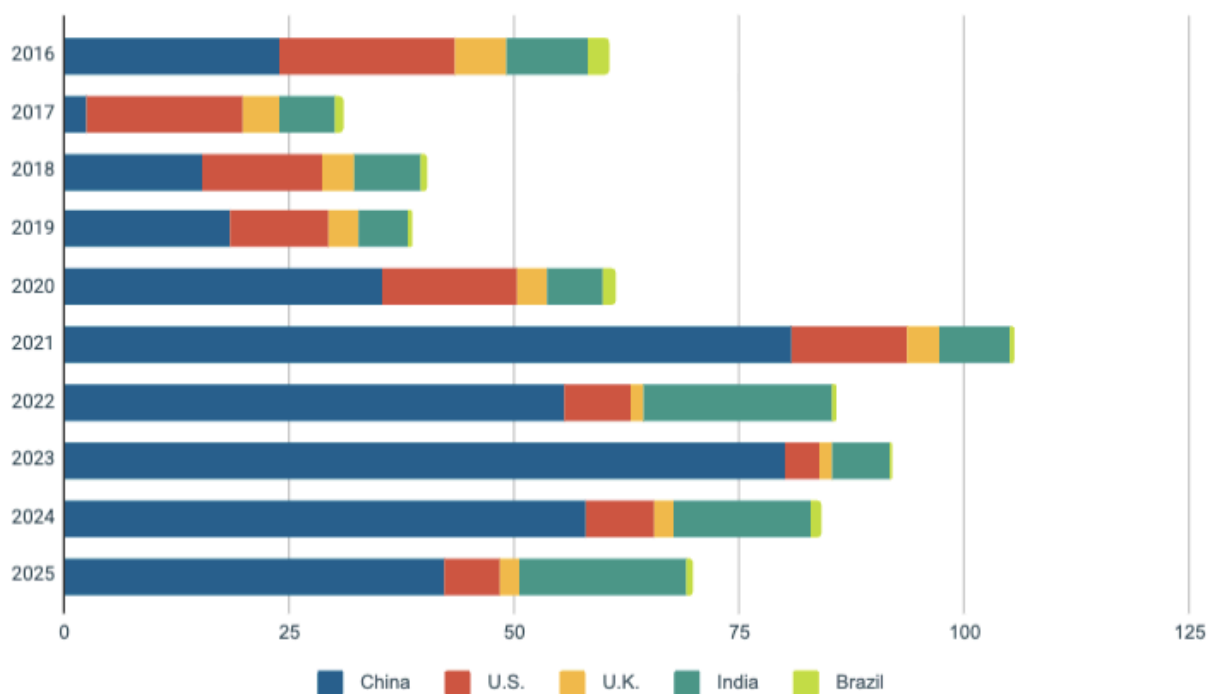
¹ Retraction Watch (website). <http://retractionwatch.com/>

² Retraction Watch Database (online resource). <https://retractiondatabase.org/>

Please note that the spike in 2023 was due to the retraction, from late 2022 until early 2024, of more than 11,000 papers by a single publisher, Wiley. Wiley had acquired the publisher Hindawi in 2021 and discovered a great deal of likely paper mill activity.³ (See below for more information on paper mills.) We expect the total for 2025 will be closer to 2022's; there is always a lag entering retractions in the Retraction Watch Database because our staff reviews and catalogs every retraction by hand, which requires numerous quality checks.

In 2025, the U.S. accounted for about 6% of retraction notices, India about 18.5%, and China about 42%. Reporting in *Nature* indicates that, when we look to see what percentage of a nation's articles end up retracted, the global average is about 0.1%. The U.S. and U.K. are well below that, at about 0.04%. China is well above at about 0.3%, with Ethiopia, Saudi Arabia, Iraq and Pakistan as high or higher. This graph, using data from the Retraction Watch Database, shows retractions by five countries as a percentage of all retractions, by year.⁴ (Note that percentages may add up to more than 100 because many papers include authors from multiple countries.)

Retractions by country, as a percentage of total

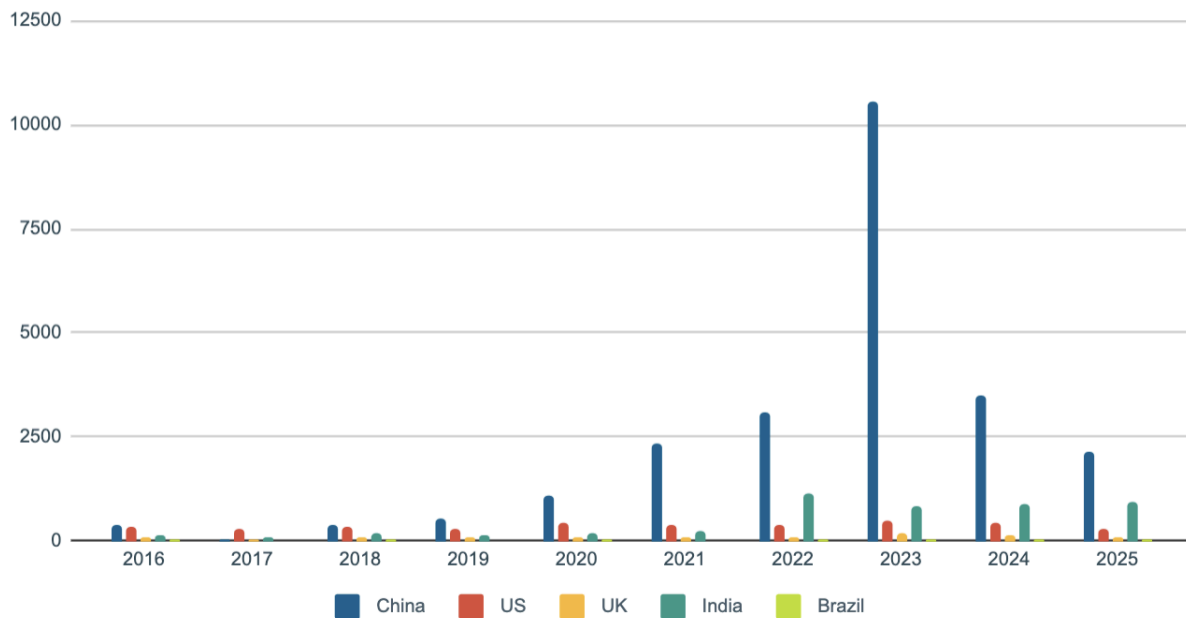


³ Kincaid, E. Dec. 19, 2023. Hindawi reveals process for retracting more than 8000 paper mill articles. *Retraction Watch*. Accessed on April 11, 2026, from <https://retractionwatch.com/2023/12/19/hindawi-reveals-process-for-retracting-more-than-8000-paper-mill-articles/>.

⁴ Van Noorden, R. Feb. 20, 2025. These universities have the most retracted scientific articles. *Nature*. 636:596-599. Accessed on April 9, 2026, from <https://www.nature.com/articles/d41586-025-00455-y>.

This graph shows the number of retractions per year by country for those same five countries:

Retractions per year, by country



Again, the spike in 2023 is due to the Hindawi mass retractions mentioned above.

What drives higher retraction rates

A number of news outlets have recently reported on data showing that China has [overtaken the U.S.](#) on many measures of scientific prestige and accomplishment.⁵ Some of this rise is due to investment by the Chinese government and real productivity gains. But some of it is also due to gaming the metrics by which science output is judged.

In the U.S. and around the world, universities want to outrank their competitors. Many of these rankings – including the ones in which Chinese universities have quickly risen – [rely heavily on publication metrics, including citations](#). They reinforce the publish or perish paradigm.⁶ When researchers know that they must publish papers in certain journals in order to land a job or earn a promotion, they do what they must to publish those papers. For example, until 2020, clinical faculty at China's teaching hospitals were required to publish two papers to earn a position, despite lacking the training or resources to do so. This helps explain why, of the institutions with the highest levels of retraction as reported by *Nature* in February 2025, five of the top 10 were

⁵ Thorp HH. Jan. 29, 2026. China turns the tables in biotech. *Science*. 391:6784. Accessed on Apr. 11, 2026, from <https://www.science.org/doi/10.1126/science.aef7757>.

⁶ Oransky I, Marcus A, Abritis A. 2023. How bibliometrics and school rankings reward unreliable science. *BMJ*. 382:1997. Accessed on Apr. 11, 2026, from <https://www.bmj.com/content/382/bmj.p1887>.

Chinese hospitals.⁷ Also until 2020, researchers in China were paid a cash bonus based on a controversial metric, called the impact factor, of the journals in which they published.⁸

For some scientists, achieving publication goals means working harder or more efficiently. For others, it means falsifying or fabricating data. Still others avail themselves of what are known as paper mills. These shady organizations provide a variety of services, from entire manuscripts to brokered authorships to “citation cartels” – ensuring that a customer’s papers are cited by others. We have reported that some paper mills even bribe editors to assure publication of their customers’ work.⁹

Unfortunately, publishers have only recently begun to admit that paper mills are a major problem. That may be due to the inherent bias toward greater publication volumes, which paper mills can help fuel. Publishers’ reliance on what are known as article processing charges (APCs) – which authors pay to have their papers published, sometimes in excess of \$10,000 – means they have an even greater incentive for growth.

Efforts such as United2Act and the STM Hub, through which publishers have joined forces to combat paper mills, are a welcome development, but real change will require publishers to acknowledge their role in leveraging publish or perish culture to boost their bottom lines.

The role of AI

Present narratives around scientific integrity rightly point to [substantial wrongdoing being waged](#) through A.I.¹⁰ To be clear, a fraction of scientists have always plagiarized, unfairly duplicated material, gamed citation indexes and committed outright fraud. But A.I. makes these forms of misconduct much easier.

Because it allows for rapid manuscript production, A.I. has also further stressed a peer review system that was already strained. The increasing volume of manuscripts being submitted to journals has made it very difficult for many journal editors to find qualified and willing reviewers. It is now routine to see editors bemoaning how few potential reviewers accept invitations, which leads to longer review times, frustrated researchers, and (ironically) slowing of the bringing new

⁷ See Van Noorden, 2025.

⁸ Abritis A and McCook A. Aug. 10, 2017. Cash bonuses for peer-reviewed papers go global. *Science* (in collaboration with *Retraction Watch*). Accessed on Apr. 11, 2026, from <https://www.science.org/content/article/cash-bonuses-peer-reviewed-papers-go-global>.

⁹ Joelving F. Paper trail: In the latest twist of the publishing arms race, firms churning out fake papers have taken to bribing journal editors. *Science* (in collaboration with *Retraction Watch*). Accessed on Apr. 11, 2026, from <https://www.science.org/content/article/paper-mills-bribing-editors-scholarly-journals-science-investigation-finds>.

¹⁰ Resnik DB and Hosseini M. March-April 2026. The vicious spiral of AI slop. *American Scientist*. 114:2,86. Accessed on Apr. 11, 2026, from <https://www.americanscientist.org/article/the-vicious-spiral-of-ai-slop>.

knowledge to a public arena.¹¹ Many researchers now turn to preprint servers – repositories for manuscripts that have yet to be peer-reviewed or published in a journal – to share their findings earlier, which is overall a positive development but can be manipulated by bad actors who disseminate misleading or incorrect results without stressing that they are not yet reviewed.

Yet at the same time AI is causing a “slop” problem on the production end of the scientific literature,¹² scientific integrity advocates are themselves using A.I. to combat these problems on the post-production end. Scientific sleuths are rapidly developing computer code that takes advantage of A.I. to scan large sections of the posted and published literature.¹³ This supercharges the ability to find plagiarized and faked material.

While many have individually done outstanding work, sleuths are also coming together online in places like PubPeer¹⁴ and in person at meet-ups like the World Conference on Research Integrity to share tools and to organize. A group interested in cleansing the medical literature of bad data, for example, recently came together and produced the [INSPECT-SR framework](#) for how to go about decontaminating medical guidelines by detecting sloppy and fraudulent work.¹⁵¹⁶ The field is rapidly professionalizing, with some scientific journal publishers now [hiring sleuths](#) to make their systems more robust.¹⁷

Where oversight falls short – and where it can be beefed up

The growing retraction rate should be interpreted as a sign of progress. It is, in fact, an argument for more investment in scientific research that is performed carefully and rigorously, and corrected when necessary. But retractions still take too long, and do not happen as often as they should. We have documented many cases in which retraction occurs only years after institutions and publishers become aware of problems. We are confident that the rate of retraction [should be about 2%](#) – 10 times what it is today.¹⁸ However, the same incentives that drive greater publishing volume work against correcting the scientific record. Most researchers, universities and publishers still see retraction as a black mark, which leads to legal threats, slow

¹¹ Jamali HR, Luca E, Wakeling S. Feb. 15, 2026. The peer review system is breaking down. Here's how we can fix it. *The Conversation*. Accessed on April 11, 2026, from <https://theconversation.com/the-peer-review-system-is-breaking-down-heres-how-we-can-fix-it-275317>.

¹² Resnik DB and Hosseini M. Mar.-Apr. 2026. The Vicious Spiral of AI Slop. *American Scientist*. 14:2,86. Accessed on April 11, 2026, from <https://www.americanscientist.org/article/the-vicious-spiral-of-ai-slop>.

¹³ Oh, KJ. June 27, 2025. Data integrity in scientific research: Insights from Elisabeth Bik. *The Scientist*. Accessed on April 11, 2026, from

<https://www.the-scientist.com/data-integrity-in-scientific-research-insights-from-elisabeth-bik-73119>.

¹⁴ PubPeer (website). <https://pubpeer.org/>

¹⁵ See the website inspect.sr and Wilkinson J, Heal C, Flemyng E, et al. INSPECT-SR: A tool for assessing trustworthiness of randomised controlled trials. Preprint available at

<https://www.medrxiv.org/content/10.1101/2025.09.03.25334905v3>.

¹⁶ See also <https://cosig.net/>.

¹⁷ Orrall A. Feb. 18, 2025. When a sleuth gets hired by a publisher: A Q&A with Nick Wise. *Retraction Watch*. Accessed on Apr. 11, 2026, from

<https://retractionwatch.com/2025/02/18/nick-wise-sleuth-publisher-taylor-francis/>.

¹⁸ Oransky I. Aug. 2, 2022. Retractions are increasing, but not enough. *Nature*, 608,9. Accessed Apr. 11, 2026, from <https://www.nature.com/articles/d41586-022-02071-6>.

action, and obfuscation. In the meantime, scientists are hobbled by relying on work that should be retracted but hasn't been.

This creates an opportunity for investment by government regulators and agencies. Retractions are hardly the only "sanction" for misconduct. The HHS' Office of Research Integrity, NSF's Office of Inspector General, and other agencies play a key role in overseeing misconduct investigations at universities that receive federal research funding. But they have long had small budgets and limited authority.

The DOJ has joined a number of False Claims Act cases that have allowed relevant funding agencies to recoup taxpayer dollars used fraudulently. One recent case against the Dana Farber Cancer Institute netted \$15 million¹⁹, while a 2019 settlement with Duke University netted \$112.5 million.²⁰ The fact that whistleblowers can earn up to 30% of these settlements creates a powerful incentive for those who are typically ignored by institutions.

The FTC could also play more of a role by scrutinizing claims made by publishers, in particular about whether peer review is being performed rigorously, or at all. The FTC was successful in obtaining a ruling against OMICS, an allegedly "predatory" publisher.²¹ Similarly, the SEC could play a role in overseeing the activities and statements of publicly traded publishers, many of whom have begun noting reputational risks due to paper mills and other bad actors in their quarterly earnings reports.

Thank you again for this opportunity to share with you our data and the results of our investigations with regard to the harms and risks to, and opportunities emerging for, scientific publishing and research integrity. We would be happy to make ourselves available if more information is requested.

¹⁹ Office of Public Affairs, U.S. Department of Justice. Dec. 16, 2025. Dana-Farber Cancer Institute agrees to pay \$15M to settle fraud allegations related to scientific research grants. Accessed on April 12, 2026, from <https://www.justice.gov/opa/pr/dana-farber-cancer-institute-agrees-pay-15m-settle-fraud-allegations-related-scientific>.

²⁰ United States Attorney's Office, Middle District of North Carolina. Mar. 25, 2019. Duke University agrees to pay U.S. \$112.5 million to settle False Claims Act allegations related to scientific research misconduct. Accessed on April 12, 2026, from <https://www.justice.gov/usao-mdnc/pr/duke-university-agrees-pay-us-1125-million-settle-false-claims-act-allegations-related>.

²¹ Federal Trade Commission. April 3, 2019. Court rules in FTC's favor against predatory academic publisher OMICS; Imposes \$50.1 million judgment against defendants that made false claims and hid publishing fees. Accessed on April 12, 2026, from <https://www.ftc.gov/news-events/news/press-releases/2019/04/court-rules-ftcs-favor-against-predatory-academic-publisher-omics-group-imposes-501-million-judgment>.