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Institutional Experience with Post-Publication Research Integrity Signals

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Short Report

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Abstract

Trust in research is foundational. Institutions advance trust by investigating research misconduct. Post-publication forums may be signals of misconduct, but their value is uncertain. We evaluated alerts from PubPeer, a post-publication forum, within our institution's research integrity program. Between 2021 and 2025, 45% of potential research misconduct signals originated from PubPeer. Most (91%) were closed at assessment with 3 proceeding to full investigation. The reasons for closure included not meeting the research misconduct definition (49%), falling outside institutional jurisdiction (34%), or not requiring additional action (15%); 2% remain open. These data demonstrate value in evaluating post-publication signals.

Introduction

Integrity of published literature is a foundational tenet of scientific research. High profile cases of research misconduct, defined as falsification, fabrication, and plagiarism, have eroded trust in science [1–3]. As a recipient of federal funding, research institutions are expected to share responsibility for the integrity of the research process[4]. Many institutions, including Indiana University (IU), fulfill this responsibility through a Research Integrity Office/Officer (RIO) who administers the institutional policies and procedures related to allegations of research misconduct. In conjunction with the institutional Deciding Official, one of the duties of the RIO at Indiana University is to facilitate review of allegations into potential research misconduct, which may include taking steps to correct the research record when errors are identified, regardless of a finding of research misconduct. The correction of the research record can take many forms, including an actual correction (through an errata) or a retraction (to remove it from the record).

The first step in correcting errors in the research record, which can improve trust [5], is to identify that errors exist. Traditionally, errors in the literature are brought to a RIO by colleagues, journals, or anonymous sources, i.e., those who either read or review a given article and notice a potential problem. In 2012, PubPeer was developed as an online post-publication platform for researchers to discuss literature [6]. While the platform does allow scientific discourse/discussion, it has also become a space where questions of scientific integrity are raised, both directly and indirectly, making it a potentially viable signal to alert institutions of misconduct [6]. To support this possibility, in 2017 the platform developed an optional mechanism that allows Universities and publishers to receive alerts if an author from their institution is named in a post. This notification occurs regardless of the content of the post.

The Research Integrity Office at IU began receiving notifications from the PubPeer system in 2021. Alerts from the platform are evaluated and moved through the office using a standard operating procedure, consistent with University policy and Federal regulations, that inform research misconduct proceedings. The goal of this paper was to evaluate signals arising from PubPeer, one example of a post-publication forum, within the context of the research integrity program at our institution.

Methods

In 2021 the Research Integrity Office at IU began receiving alerts from PubPeer when a posted comment referred to an article that includes an IU-affiliated author. The IU affiliation is based on metadata provided to the journals and subsequently included in Crossref, a platform that facilitates linking research publications through open metadata. Alerts are sent to the Research Integrity Office via email and simultaneously posted to an IU-specific PubPeer dashboard. All alerts from PubPeer are entered into our case management system and evaluated for concerns of potential research misconduct. This process involves an initial assessment, conducted by the RIO and her staff, with input from a faculty member on the Research Integrity Standing Committee when needed, to determine whether the concern is frivolous, does not raise questions of research misconduct, or does not otherwise warrant further action. Anything not dismissed at assessment moves to inquiry, where an inquiry committee decides whether there is sufficient credible evidence of possible research misconduct to warrant an investigation. Anything not closed at inquiry then moves to investigation to develop a factual record, where recommendations are made regarding whether research misconduct occurred, by whom, to what extent, and what steps are needed to correct the research record.

For the analyses presented in this paper, all cases from 2021–2025 were pulled from our case management system. Total cases, the origin of the concern (from PubPeer or not), and final decision/determination were extracted. For all cases dismissed at assessment, the reasons for dismissal were evaluated.

Results

Our institution assessed 260 concerns of potential research misconduct during the 5-year period of our analysis (Table 1). The number of total concerns arising from PubPeer was 116, representing 45% of all potential allegations. In each year, the number of concerns originating from PubPeer was equal to or less than half of all received concerns, ranging from a low of 27% (9 of 33 cases) to a high of 50% (33 of 66).

Table 1
Total cases across years at our institution.

2021	Total	Non-PubPeer N (% of total)	PubPeer N (% of total)
	33	**24 (73)**	**9 (27)**
2022	52	30 (58)	22 (42)
2023	40	22 (55)	18 (45)
2024	66	33 (50)	33 (50)
2025	69	35 (51)	34 (49)
Total	**260**	**144 (55)**	**116 (45)**

The disposition of PubPeer alerts by the RIO office was evaluated across the five years (Fig. 1A). Overall, 106 of the 116 (91%) of all alerts from PubPeer were closed at assessment. Of the remaining 10 cases, 5 were closed at inquiry, 3 proceeded to full investigation, and two remain open (those received at the tail end of 2025).

Analysis was conducted on the PubPeer alerts that were closed at assessment (Fig. 1B**)**. The majority of those, 52 of 106 (49%), were closed because the comment(s) did not meet the definition of research misconduct, i.e. falsification, fabrication, or plagiarism. The second most common reason for closing was that the comment was outside of the institutional jurisdiction (36 of 106; 34%), either because the research was not conducted at our institution or because the article was outside the time limitation specified in the institutional research misconduct policy. The remaining alerts (16 of 106; 15%) were determined not to require any additional action; for example, because an erratum had already been submitted. A small number of cases (2) were closed because the comments were removed by the PubPeer moderator prior to completion of the assessment process.

Discussion

Identification of research misconduct in the published literature, and correction of the research record, is essential to promote trust in research [2, 5]. Post-publication public forums, no matter the intent of their creation, have become a potentially important signal in the identification of errors in the literature[7, 8]. The current report details the effect, at our institution, of systematically integrating post-publication signals, specifically PubPeer posts, into the workflow of a research misconduct office. Our results show that such incorporation had a clear impact on the number of potential allegations reviewed by the RIO at our institution, representing 45% of all allegations over the past 5 years. Notably, this apparent increase in allegations reviewed did not result in an equal increase in workload, as the majority of alerts were dismissed at assessment. Some of those signals did result in inquiry and/or investigation, representing an important fulfilment of the Research Integrity Office's purpose, to maintain the integrity of the

research record. It is possible, of course, that those alerts that proceeded to inquiry/investigation could have eventually come to the office through mechanisms outside of PubPeer.

We propose two benefits from institutional tracking of post-publication research integrity signals. First, it creates an institutional culture that is committed to research integrity, both through the alignment with research misconduct processes and the drive to ensure an accurate research record. This culture manifests at our institution through outreach to authors following alerts from the PubPeer system. Our outreach balances fulfillment of the key responsibility of the RIO office, to assure research integrity, with protection of our researchers against false and/or incomplete claims of potential research misconduct. Our processes include communicating with authors, who often, but not always, are aware of the posting. Through communication with them, we gain sufficient information that often allows the concern to be dismissed at assessment, and we offer to work alongside the authors to decide whether or not to address the comments. Assisting PIs in making decisions on if/how to address any public post-publication comments is an important part of the process. Our team has integrated information about post-publication forums into our responsible conduct of research (RCR) and other research integrity educational materials to help boost awareness and offer guidance. The second benefit of integration and awareness of post-publication signals is that it allows a RIO office to address, in a timely fashion, those concerns that are already public-facing and may have future ramifications for the institution. On more than one occasion, our RIO has been contacted by federal agencies raising concerns about publications referenced in PubPeer comments, with specific citation to those comments. Having prior knowledge of such concerns *a priori* has simplified those interactions.

Conversely, there are reasons why an institution may choose not to consider post-publication signals. Although our institution has chosen to consider any alert of potential research misconduct to be worthy of assessment, some institutions prefer a named complainant to initiate the process. The anonymous nature of many post-publication forums makes this challenging, if not impossible. Our institutional policy does not require a named complainant and, in these cases, we simply note the complainant as anonymous via the respective platform (i.e. PubPeer). Such a practice aligns with our previous practices, as we have assessed multiple potential allegations with anonymous complainants received via other mechanisms (anonymous reporting hotline, anonymous email, etc.) during the five-year time period reviewed.

Our analysis of the PubPeer comments that our team dismissed at assessment was informative. Although each case was individually assessed, and the internal description for the reason for dismissals differed slightly, there were three foundational categories for dismissal. As such, we propose a simple framework for assessing a signal from any post-publication forum (Fig. 2). These steps, and their associated questions, represent the process that most RIOs and their teams likely undertake in any case assessment – supplemented with some specific prompts for consideration.

The first step is to determine if the concern meets the definition of research misconduct. It is important to remember that post-publication forums, in their original development, are platforms for scientific

exchange and discourse. Thus, a number of the comments contain scientific questions and comments that have nothing to do with questions of falsification/fabrication/plagiarism (FFP). For those entries that raise a clear question of FFP, it must be determined whether the alleged FFP is within the institution's jurisdiction. This analysis involves gathering information about the author(s) from your institution, including whether the research was conducted at your institution and what their role in the project might have been, which is often described in the paper. An additional question to consider is whether the allegation meets the time limitations specified in the institutional policy, or if it meets the subsequent use exception. Finally, consideration should be given to evaluating broadly whether additional value would be gained from moving the case forward. The majority of concerns that do not meet this criterion include those that already have a detailed author response that is deemed sufficient, already have a correction pending, or have a published erratum. An answer of 'yes' to all three questions warrants the case moving to the inquiry stage of the research misconduct process.

The integration of a workflow to assess post-publication alerts did increase the number of assessments conducted by our Research Integrity Office staff. Yet the vast majority of cases were dismissed at assessment, restricting the increased workload to the earliest and least resource-intensive stage of the research misconduct process. The fact that this trend has held over the past several years strengthens the rigor of the finding, although it cannot be generalized to all institutions and could change in future years. Further, it's possible that some of these concerns could come to the RIO office through other means. When evaluating the concept of integrating with any post-publication platform, the cost of this workload would need to be balanced against the benefit of general awareness and identification of only a few cases that would proceed to inquiry and/or investigation.

In conclusion, we found that integration of post-publication signals, such as those received from PubPeer, into our research misconduct process increased the number of allegations reviewed but had minimal impact on the overall workload as most were dismissed at assessment. A few signals did proceed through investigation, while other alerts led to correction of the research record. Given that any incorrect research reduces trust, these data document the added value of evaluating post-publication signals.

Declarations

Competing Interests:

The authors declare that they have no competing interests

Authors' contributions

MRA, LA, DM, SB, and ACW conceived and designed the study. MRA, ACW analyzed the data. MRA, LA, DM and ACW interpreted the results. MRA drafted the first version of the manuscript; LA, DM, SB and ACW critically reviewed the manuscript. All authors approved the final manuscript.

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Figures

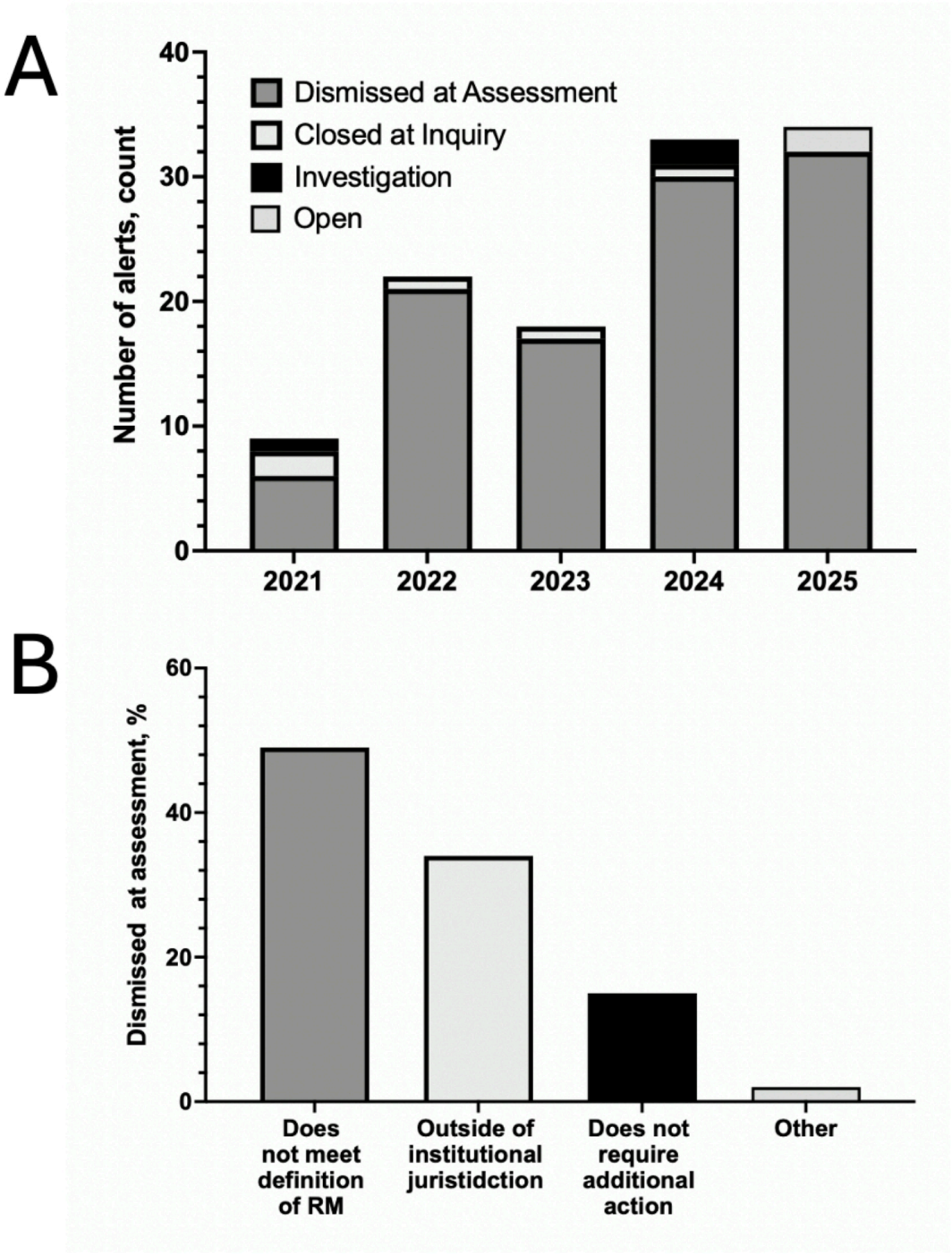


Figure 1

Final disposition of PubPeer cases at our institution (A); classification of the PubPeer case that were dismissed at assessment (B).

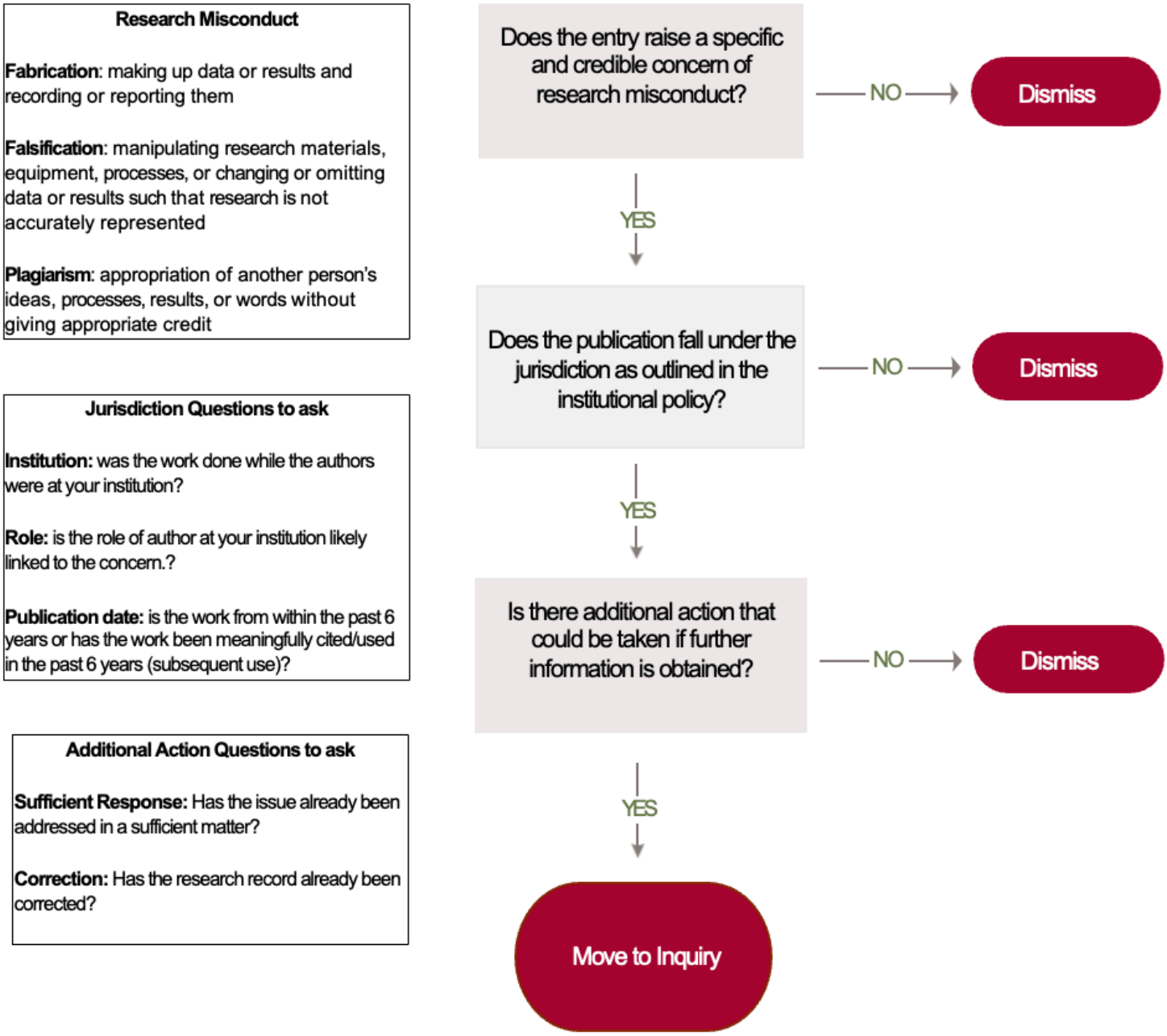


Figure 2

Proposed framework for consideration of signals from public forums.