PUBLICATIONS | 05.14.2026

Pros and Cons of AI Tools in Research Integrity Issue Detection

When AI Meets RI: Legal and Compliance Considerations Emerging from the Use of AI Tools to Identify Research Integrity Concerns

This is the first in a series of posts addressing the use of AI-based screening tools to detect research integrity issues, including pros and cons, unique challenges, downstream implications, potential pitfalls, and risk mitigation practices.

The research integrity environment is evolving quickly:

- Traditionally, lab members, peer reviewers, or other scientists who couldn't replicate results were the ones who most frequently raised research misconduct claims.
- Today, potential anomalies and associated misconduct claims are increasingly identified using AI-based tools and sometimes by individuals with little or no connection to the scientists or the specific science in question.

PROs of AI Tools

AI screening tools are incredibly powerful and can help identify research integrity concerns:

- The tools can identify a wide range of potential issues within a manuscript or across databases of published work (e.g., PubMed).
- The tools can (and often should) be used to pre-screen manuscripts and grant applications before submission.
- Adoption by institutions, journals, peer reviewers, and funding agencies is increasing.

Potential CONs of AI Tools

AI based research integrity allegations often do not account for:

- the limits of historical research methods;
- human judgment
- poor image quality;
- the unavailability of original records for older research; or
- individual intent or motivation.

What the Use of AI Tools Means for Research Organizations

- Potential for significant growth in research misconduct questions or allegations;
- increased infrastructure and staffing needs to review and evaluate the claims; and
- potential legal and compliance challenges, including the threat of False Claims Act litigation.

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