PUBLICATIONS | 05.26.2026

Don't Leave it Solely to AI – Spotting Potential Research Integrity Pitfalls

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

This is the fourth 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.

AI-based screening is a powerful method to identify research integrity concerns – both for the public and for institutions. However, we have recognized a variety of potential research integrity issues that may be identified with or without the use of AI tools. Some of these issues may be apparent to outsiders.

The public or third parties may be able to spot:

- **Outsized Laboratories** – Large or prolific laboratories may increase risk of overlooked research integrity issues.
- **Corrections/Retractions** – Timely and accurate actions can clarify or resolve issues, but rushing can lead to new allegations or heightened concerns.
- **Lack of Reproducibility** – May be an indicator of problems, especially if there is a pattern across a body of work.
- **Overreliance on Self-Citations** – Citations to a single work, or to one's own work alone, in publications or grant applications may heighten legal or financial risk if the work is later questioned.

Insiders are typically better positioned to identify:

- **Insufficient Supervision** – Many claims involve errors or anomalies by junior researchers that may have been identified with reasonable Principal Investigator or supervisory diligence.
- **Inadequate Training** – Junior researchers often report inadequate training on or experience with tasks underlying errors/anomalies.
- **Poor Data Hygiene** – The inability to produce original data, which can result from inadequate data storage practices, often complicates research misconduct reviews.

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