



How infrastructure, metadata, and analytics shape trust

Preserving Integrity: Collective Actions for Trust and Impact

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AGENDA

- Trust in the *Pulse of the Library Survey*
- Citation Networks as trust signals
- Trust beyond our own ecosystems

Trust in the *Pulse of the Library Survey*

“Research and academic integrity
remains a [...] top concern for academic
libraries.”

Libraries have a crucially important role to
serve as gate-keepers and the center of
knowledge in the age of AI, particularly
*when it comes to **preserving academic***
and research integrity.

2000+
librarians

109 countries

77% > Academic libraries

46% > United States

Pulse of the Library

Global survey of academic, public and national libraries on how AI and other emerging priorities are shaping the future of libraries.

Download the report



<https://clarivate.com/pulse-of-the-library/>

Using Citation Networks as *trust signals*

- Citation links create verifiable provenance.
- Trust comes from “like-for-like” comparisons, not raw counts.
- Citation networks need structure to avoid “false” signals and to act as valid trust mechanisms
- Stable subject categorization underpins trust.

Our Responsibility

Curator of scholarly signals

- Editorial selection
- Stable categorization
- Sustained metadata stewardship

Builder of evaluative frameworks

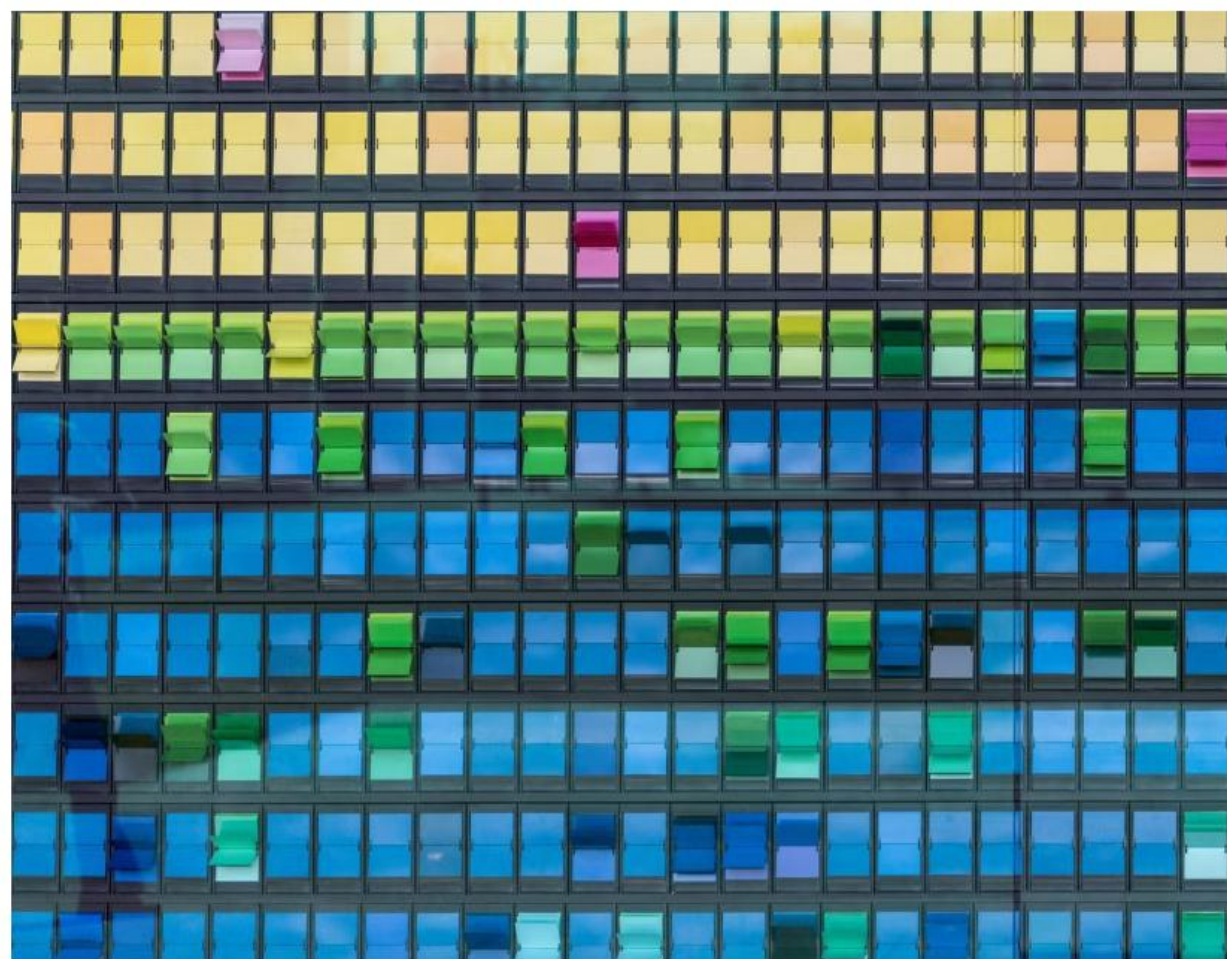
- Context-aware normalization
- Collaboration-aware
- Standardisation is key

What Should We Do Differently?

- Ask how signals are constructed
- Demand transparency from AI systems
- Treat metadata as critical infrastructure
- Keep humans in the evaluative loop

No structure. No trust.

Why structured and categorized research data are essential for search, discovery and analytics



Dmytro Filchenko

Senior Director, Research & Analytics at the Institute for Scientific Information

Pressures Forcing Change in Academic Research and Scholarly Publishing

Adoption of chat agents

Higher risk of mis- and disinformation



Decline in reading full documents

Copyright/IP concerns/lawsuits

How do libraries and publishers remain relevant?

Trust beyond our own ecosystems

what is the latest research about carbon capture?

As of May 2025, carbon capture research is advancing rapidly across materials science, industrial applications, and policy frameworks. Here's an overview of the latest developments:

Materials Innovation

- Silk-Based Sorbents:** Researchers have developed silk-fibroin aerogels capable of capturing approximately 3.65 mmol of CO₂ per gram at regeneration at just 60°C and maintain stability. A cost-effective alternative to traditional amine sorbents.
- COF-999 Framework:** Scientists at UC Berkeley developed a metal-organic framework that captures CO₂ from ambient air at 1.0 mmol/g at 50% humidity and can be regenerated for reuse in direct air capture (DAC) applications.
- Affordable Capture Materials:** Northwestern University researchers developed porous materials like activated carbon and iron/aluminum-based materials, potentially lowering costs and enhancing scalability.

Silk: A promising natural blend of amino acids for efficient CO2 capture

Smith, Olivia; Frontiers of Environmental Science & Engineering; 2022

In recent years, various nanoporous solid sorbents have drawn significant research interest as promising carbon capture materials. However, the issues of high synthesis cost, limited CO2 adsorption capacity, and slow regeneration rates remain challenges. This study reports a silk-based sorbent that addresses these issues by combining the high surface area and porous structure of aerogels with the natural amino acid groups of silk fibroin, which provide active sites for CO2 capture.

23 Times Cited 42 References

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Industrial Applications

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Page Insights

Topics discussed on this page include advances in carbon capture technologies, policies, and uses to reduce CO₂ emissions.

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The Impact of Carbon Capture Technology on Climate Change Mitigation: A Comprehensive Review

Smith, Olivia; Frontiers of Environmental Science & Engineering; 2022

47 Times Cited 55 References

Advancements in Carbon Capture Techniques: A Systematic Review

Johnson, Mark T.; Journal of Sustainable Energy; 2021

32 Times Cited 23 References

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Related Videos

Carbon Capture, in In Short: A Lesson On Almost Everything, Episode 22

In In Short: A Lesson On Almost Everything: Academic

*"The uncomfortable question is no longer 'Can humans find this content?' but 'Will AI agents surface and use it?'
In an agent-mediated discovery economy, **invisibility to machines increasingly means invisibility to people.**"*

--Hong Zhou, "Keywords Are Not Dead – But Discovery Is No Longer Just Search"

<https://scholarlykitchen.sspnet.org/2026/01/06/keywords-are-not-dead-but-discovery-is-no-longer-just-search>



Thank you