



Elisabeth Bik ✓ @elisabethbik.bsky.social · 17d

Good morning from the @wcrifoundation.bsky.social in Vancouver, BC. Today, I will attend two pre-conference workshops before the grand opening tonight.

We'll start with Workshop 2 - AI in Bioimaging: Challenges and Solutions to Facilitate FAIR Image Data
wcri2026.org/pre-conferen...
#WCRI2026



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The workshop is opened by @image-integrity.bsky.social, who stresses the importance of images as data in scientific papers, shares some data from the STM workshop about microscopy metadata, and shows several images with integrity issues. ImageTwin and Proofing tools are useful.
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JC: GenAI can now produce realistic but fake photos. Image tools cannot reliably detect those images. If we cannot prove that something is fake, maybe we should prove that something is real.

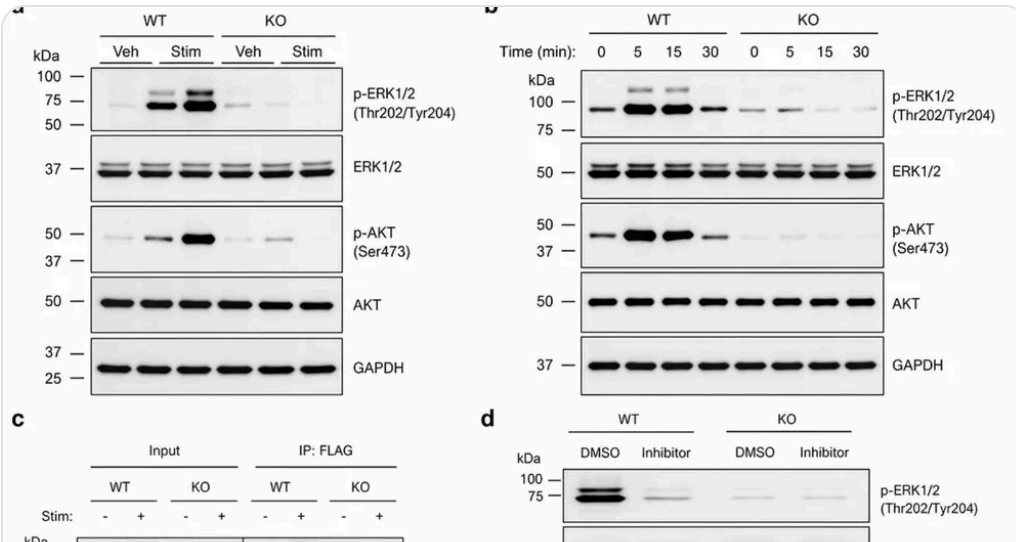
mikhoelias.substack.com/p/how-ai-bre...
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Feedba



How AI Breakthrough Could Shake the Scientific Publishing Process

Recent Image generation and LLM models are so good they can produce digital assets nearly undistinguishable from genuine ones.

mikhoelias.substack.com

2 comments, 14 retweets, 50 likes



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JC: Often, if you ask authors for raw data, you get the same images, not any uncropped ones. Or an excuse that the main authors died in a plane crash, with all their data. But we need to be reassured. We need to trust the data. We need better evidence that data is real and correct.

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1 comment, 4 retweets, 24 likes



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JC: Metadata is data about data; it can be found in the text, legend, or embedded in the image file itself. We might see camera settings, date, microscope model, but metadata might also show that Photoshop has been used.

Journals are in a uniquely powerful position to drive improvements.

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Feedback



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JC: Challenges:

Training: Preserving metadata, data management

Open Science / data acquisition needs infrastructure

Willingness of publishers - journals can enforce higher standards - and this has already successfully worked in e.g. pre-registration of clinical trials.

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JC: Some people, including editors!, see figures in a scientific paper as 'just illustrations'. That is so disturbing.

Journals should really say: no data, no paper.

Discussion: We are now the stewards of large amounts of data - how do we do this correctly? Teach grad students.

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Q: how do journals handle issues with older, published papers, but there is no raw data?

A: If the data is clearly fabricated, we would retract.

If it could be an error, correction or Expression of Concern.

Context is also important - if dozens of other papers have similar problems.

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Discussion: Equipment manufacturers can also play a big role, where data gets verified ("hashed"). But this might be expensive and might also be hackable?

Also: What IS raw data? It's not a PDF. Raw data can be huge!

Nathalie Gaudreault: a new manuscript will come out about this topic.

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Next up: Advancing Research Integrity in Bioimaging Through Community-driven Standards and Open Tools – with Nathalie Gaudreault
What is imaging metadata?

NG: all information to interpret, evaluate quality, reproduce and share and reuse images data. Includes experimental details, settings

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NG: Metadata can be found in lab notebooks, instrument and acquisition software, and in the image file itself. It gives us reproducibility but also authenticity. Descriptions in a paper are often vague, missing important details.

www.nature.com/collections/...

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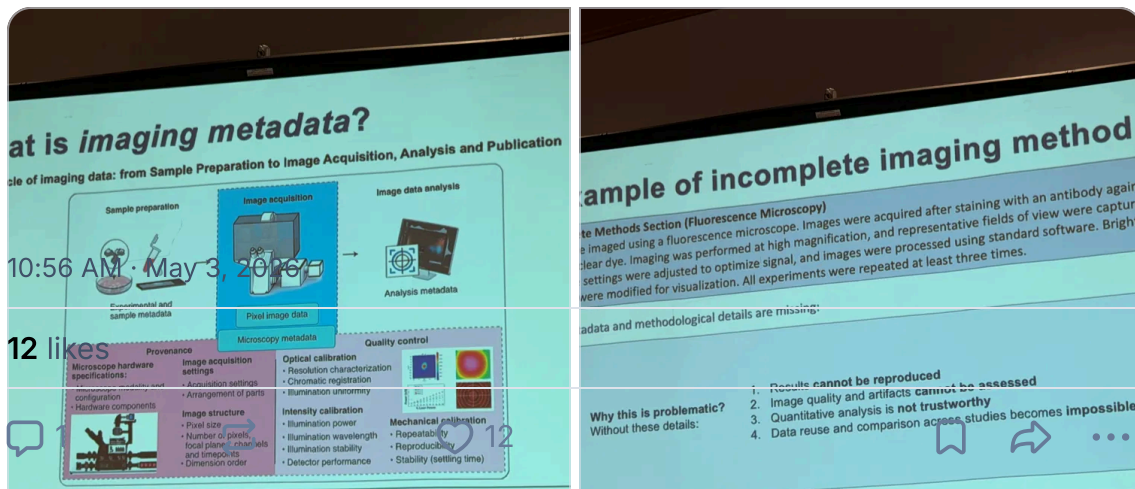
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Write your reply



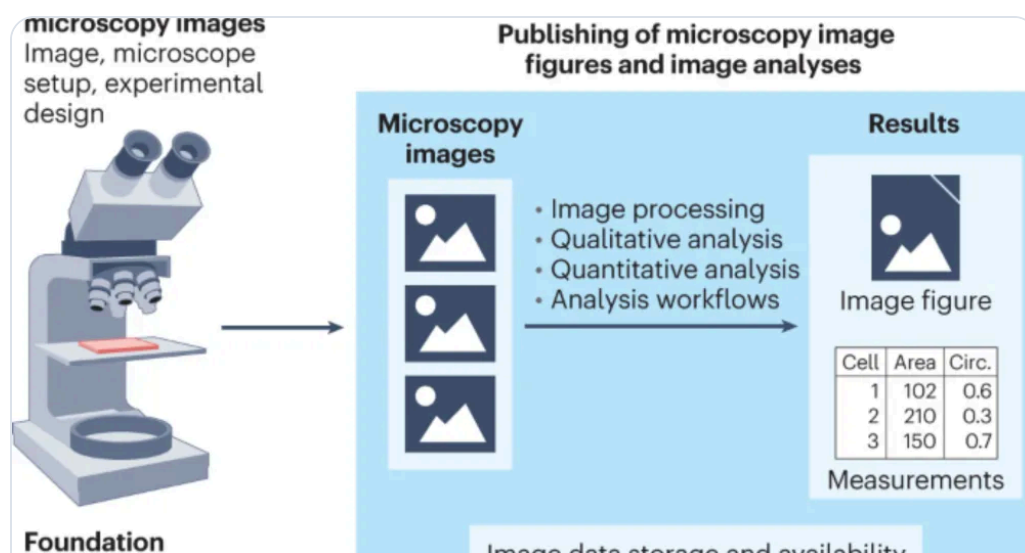
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NG: The metadata embedded in the image file itself is only there, if it was set up properly. If a file is converted from a proprietary format, some data might be lost.

Our guidelines for image presentation (crop, rotate, insets, adjustments, scale bar):

www.nature.com/articles/s41...

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Community-developed checklists for publishing images and image analyses - Nature Methods

Community-developed checklists offer best-practice guidance for biologists preparing light microscopy images and describing image analyses for publications.

www.nature.com

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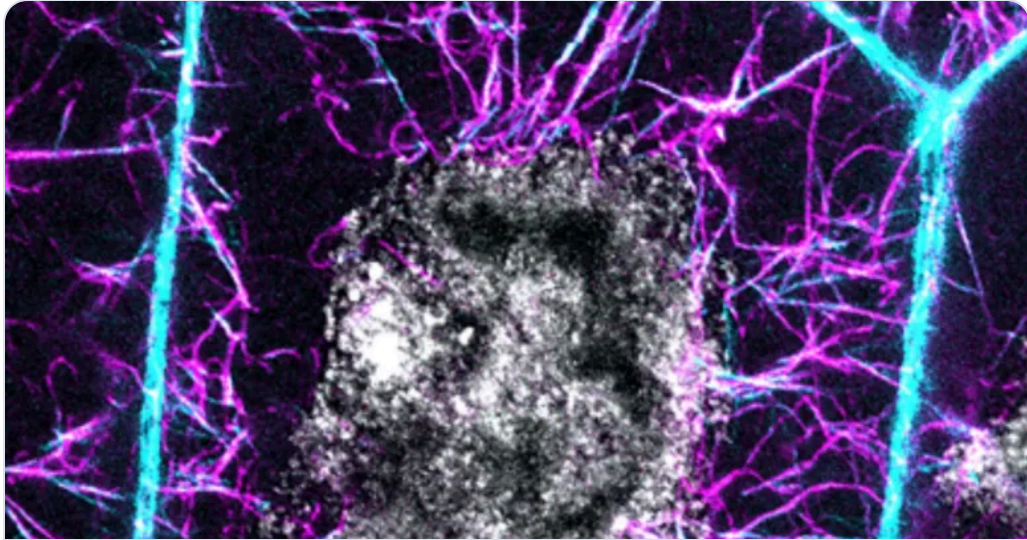
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Feedback

NG: Another bare-minimum checklist for microscopy reporting, guided on clarity, practicality, and ease of adoption. These guidelines are for authors, reviewers, journals/editors, and readers. Each group plays a role in improving scientific quality. rupress.org/jcb/article/...

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Better reporting is better science: Community-defined minimal reporting requirements for light microscopy

This viewpoint presents a community-endorsed checklist defining minimal light microscopy metadata to improve rigor, reproducibility, and transparency in re

rupress.org

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NG: Guidelines now exist; we just need to start using them! Some journals are already adopting these guidelines. Check information for authors.

BFF: BioFile Finder - to help find correct biological image data across large, siloed, and inconsistently labeled datasets

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NG: BFF is a light-weight web app to share image files from a spreadsheet. It allows you to focus on one particular field and share those image files with a collaborator. You will see the thumbnails/replicates. It creates a link to share, that others can download.

bff.allencell.org
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BioFile Finder

Open-use web application created for easy access, collaboration, and sharing of datasets through rich metadata search, filter, sort, and direct viewing.

bff.allencell.org



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NG: This preprint has incorporated BFF, you can play with it:

www.biorxiv.org/node/4027823...

(click under "data/code")

Note EB: I have no idea how to play with this - this part of the workshop went too fast and I did not get it - looked really hard to learn how to use it - sorry!)

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Abstract Full Text Info/History Metrics

Data/Code [Preview PDF](#)

- https://open.quiltdata.com/b/allencell/tree/aics/emt_timelapse_dataset/
- https://biofile-finder.allencell.org/app?group=Experimental+Condition&group=Gene&source=%7B%22name%22%3A%22imaging_and_segmentation_data.csv+%28%2F15%2F2024+4%3A26%3A03+PM%29%22%2C%22type%22%3A%22csv%22%2C%22uri%22%3A%22https%3A%2F%2Fallencell.s3.amazonaws.com%2Fai

Subject Areas

- 0 Peer Reviews
- 0 Community Reviews
- 1 Automated Services
- 0 Blogs/Media
- 0 Author Videos



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Discussion:

- * Funders and institutions often do not support these tools - how do we get them to support?
- * How do we get people to manually enter all that metadata associated with your photos?
- * Uniform data labeling? Maybe AI can help?
- * Long-term management is hard to fund.

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NG: Medical images are way ahead of basic research images - they have much more structured data.

[I am having trouble understanding some people who talk very fast without a microphone in an echo-y room]

This concludes this morning's workshop - back in an hour.

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Lunch is served! Build your own Buddha Bowl. And the tomato bisque soup is amazing.

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Irene Hames @irenehames.bsky.social · 16d

...and thanks from me too for the comprehensive and clear posting, really helpful. Looking forward to seeing your threads on the rest of [#WCRI2026](#) !

[#researchintegrity](#)
[#imageintegrity](#)



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