

FOCUS | COMMENT

 Check for updates

QUAREP-LiMi: a community endeavor to advance quality assessment and reproducibility in light microscopy

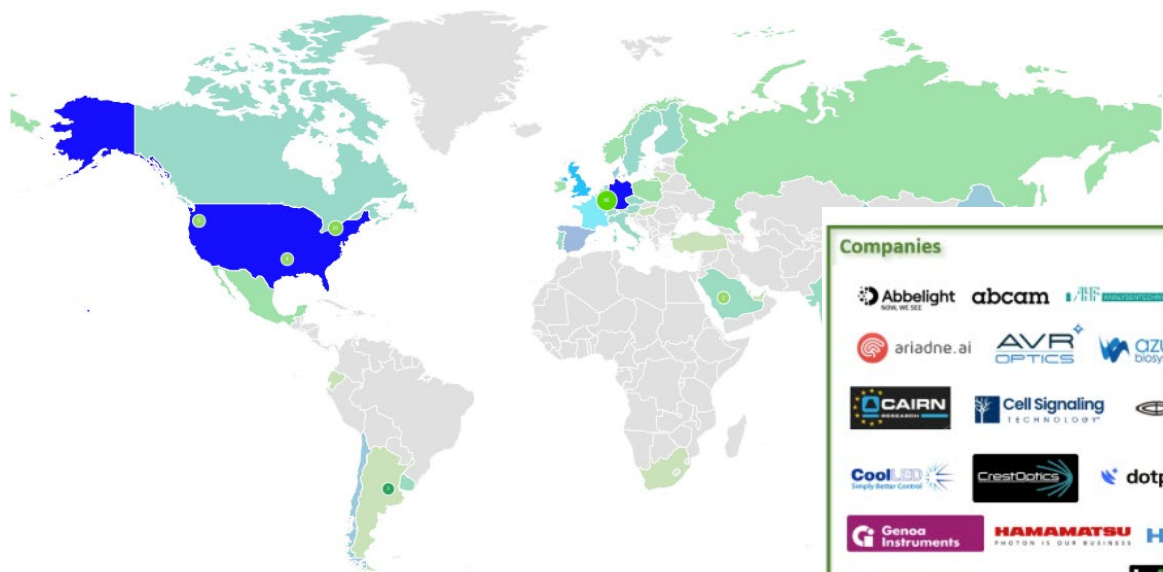
The community-driven initiative Quality Assessment and Reproducibility for Instruments & Images in Light Microscopy (QUAREP-LiMi) wants to improve reproducibility for light microscopy image data through quality control (QC) management of instruments and images. It aims for a common set of QC guidelines for hardware calibration and image acquisition, management and analysis.

Nelson, Glyn, Ulrike Boehm, et al. "QUAREP-LiMi: A Community-Driven Initiative to Establish Guidelines for Quality Assessment and Reproducibility for Instruments and Images in Light Microscopy." *Journal of Microscopy* 2021: **284**, 56–73.

Boehm U, **Nelson G**, et.al. QUAREP-LiMi: a community endeavor to advance quality assessment and reproducibility in light microscopy. *Nat Methods*. 2021: doi: 10.1038/s41592-021-01162-y.



631 Members with worldwide coverage

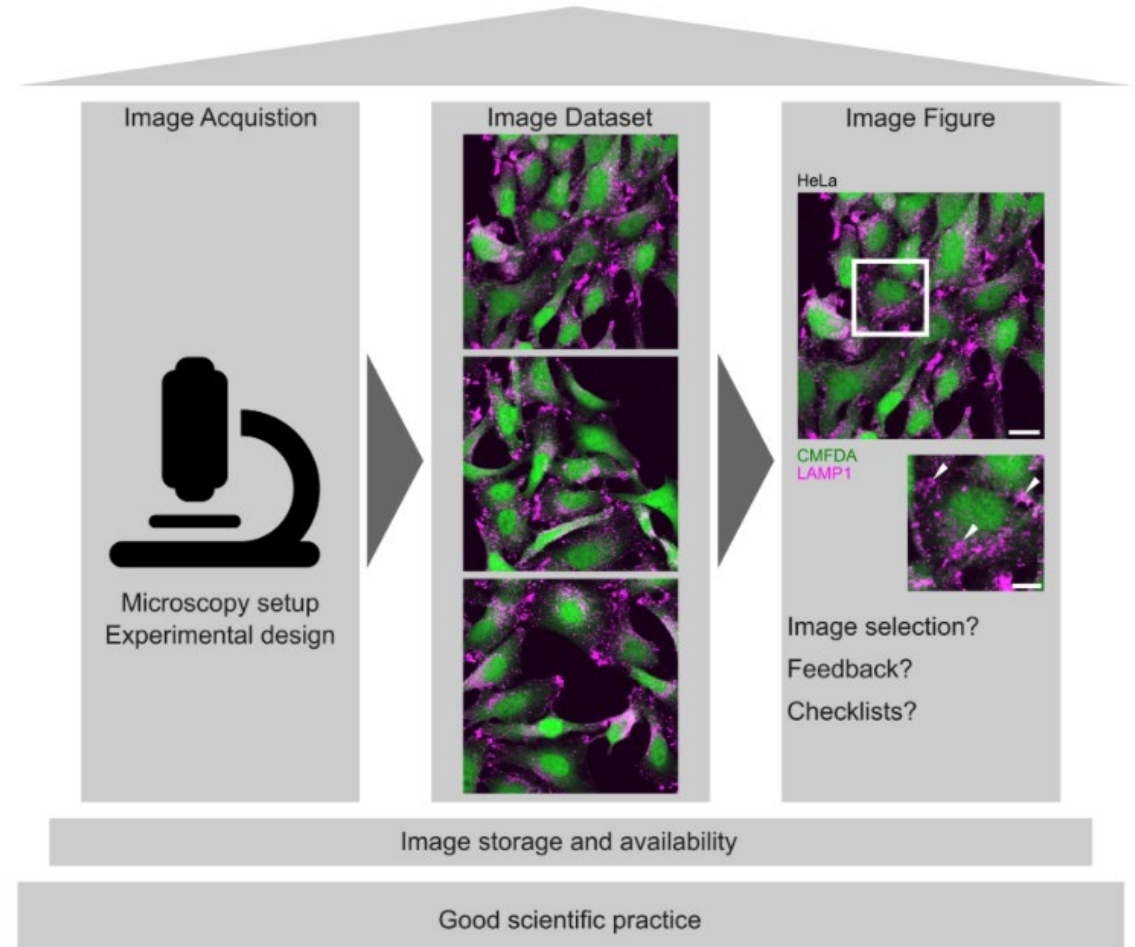


WG12: Image Quality. Checklist and Recommendations for image publication

Schmied, C., Nelson, M.S., Avilov, S. *et al.* **Community-developed checklists for publishing images and image analyses.** *Nat Methods* **21**, 170–181 (2024).

<https://doi.org/10.1038/s41592-023-01987-9>

Overview of QUAREPs work on data reproducibility:
Jambor.,H. A community-driven approach to enhancing the quality and interpretability of microscopy images
J Cell Sci (2023) 136 (24): jcs261837.



Open protocols: protocols.io and metadata models

- Version 2 for illumination power and stability updated to include confocal and widefield light sources.
dx.doi.org/10.17504/protocols.io.5jyl853ndl2w/v2
- Stage accuracy and repeatability published: dx.doi.org/10.17504/protocols.io.kxygxz2rdv8j/v1
- The NBOQ metadata model is now endorsed/adopted by the original 4 core consortia (4DN/BINA/OME/QUAREP) as well as Canada Bioimaging, HuBMAP and SenNet and is being evaluated by BISQUE and the Brain Image Library. We plan for QUAREP WG7 to establish governance of the metadata model.
- Co-registration protocol close to final version
- Lateral and Axial Resolution version 2 (widefield) close to finalization
- Field flatness protocol close to final version
- Detector characterization protocols close to finalisation

Presented Workshops:

- **ELMI 2024 (Liverpool) Power measurement and lateral/axial resolution workshop demonstrations**
- **BINA 2024 (Madison, WI, USA) Lateral/ axial resolution demonstrations**

Glyn Nelson
Newcastle University Bioimaging Unit Manager
QUAREP-LiMi Steering Committee Chair and WG5
co-chair.

glyn.nelson@ncl.ac.uk