

## WG 9 Funding & Planning 3<sup>rd</sup> meeting

**Location:** Zoom

**Date/Time:** 02/02/21 (15:00-16:30 CET)

**Host:** Roland Nitschke (RN)

**Chair:** Roland Nitschke

**Minutes:** Alex Laude

### Participants

Last name	First name	Organisation/Affiliation	Initials	Attending (Y)-doodle poll YP- actual
Roland	Nitschke	Freiburg / GerBi	RN	Chair
Alex	Laude	Newcastle University	AL	Co-Chair
Bagley	Steve	Univ. Manch.	SB	(Y)
Batti	Laura	Wyss Center, Geneva	LB	(Y)
Bischof	Johanna	Euro-Biolmaging	JB	
Chew	Teng-Leong	HHMI Janelia Research Campus	T-LC	
Colarusso	Pina	University of Calgary	PC	(Y)
Cole	Louise	Univ. Technology	LC	
Conde-Sousa	Eduardo	INEB/i3S	EC-S	
Dauphin	Aurelian	RTmfm	DA	(Y)
Dobbie	Ian	UK Biolmaging	ID	
Ebeling	Carl	Bruker	CE	
Erikson	John	Euro-Biolmaging	JE	
Faklaris	Orestis	RTmfm	OF	
Fernandez-Rodriguez	Julia	University of Gothenburg	JF-R	Y
Guzman	Camilo	Åbo Akademi University	CG	
Hartmann	Hella	GerBi-GMB WG 1	HH	
Heddleston	John	Cleveland Clinic Florida Research and Innovation Center	JH	(Y)
Itano	Michelle	Univ. North Carolina	MI	(Y)
Keppler	Antje	GBI	AK	Y
Kirchenb�uchler	David	Northwestern	DK	
Kunis	Susanne	GerBi-GMB WG 6	SK	
Philippe	Laissue	University of Essex	PL	Y
Levitt	James	Nikon Imaging Centre, King's College London, UK	JL	
Lim	Liz	A*STAR Mic.Platform	LL	
Marcello	Marco	Univ. Liverpool	MM	(Y)
Moore	Joshua	Univ. of Dundee	JM	

Nelson	Glyn	UK BioImaging	GN	
Paina	Federica	EMBL (Global BioImaging)	FP	Y
Pfander	Claudia	Euro-BioImaging Industry Board	CP	
Rasse	Tobias	@BioHub EMBL		Y
Resch-Genger	Ute	MPI-HLR	TR	
Schapman	Damien	BAM	UR-G	
Seitz	Arne	RTmfm	DS	
Sossick	Alex	EPFL	AS	Y
Strambio-De-Castillia	Caterina	University of Cambridge	AS	
Swedlow	Jason	University of Massachusetts Medical School,	CS-D-C	Y
Wee	Erika	Univ. of Dundee	JS	
		Cold Spring Harbor Laboratory	EW	

## Agenda & Minutes

### 1. Welcome Recording agreement & minutes writing

### 2. Minutes of 2<sup>nd</sup> WG9 meeting (03/12/20) (10min)

#### a) Action points

#### i) Publications (RN)

Nature methods: discussion with Rita Strack in Dec, plan is postpone submission until the end of February. Publication will be a summary of the QUAREP WP.

Science Europe: RN in contact with [Science Europe](#) – organisation of many funding agencies and research institutions in Europe. They have joined as an observer in QUAREP. They may also bring into QUAREP members of their organisation. The hope is that the funding agencies will be able to financially support QUAREP.

#### ii) Phototoxicity meeting (PL)

Update to be provided by PL later on in the meeting.

#### iii) Training working group – thoughts? (PC / RN / AL)

Not followed up but there are discussions in WGs regarding how to implement and disseminate their recommendations through the training of different stakeholder groups. To

be discussed in the Chair / Vice chair meeting. AK: several training initiatives coming up eg. BINA. May be worth coordinating those that are planned rather than create a dedicated group through QUAREP. RN: QUAREP training ideally should be developed within WGs but coordinated with existing resources / groups. Proposal for international course through GBI to teach QC recommendations to the communities. CS-D-C: BINA plan to expand their website and develop training materials. JF-R: we don't need additional dedicated training group but should get WGs / QUAREP to coordinate with existing groups developing this.

iv) Website (AL / RN)

Little take-up from WG members for participation in the website. Request will be sent out via full QUAREP / Chairs for participation. GN: Arne F plans to offer training and has sent out a call for WGs to send representatives to the training.

v) More efficient communications within QUAREP- using example of Eurobioimaging (AK)

AK: Global Bioimaging (GBI) have been promoting QUAREP. Also plan is to promote to under-represented communities eg S America, Africa. Request for QUAREP to deliver short webinar to GBI early 2021.

### 3. Apologies & short Introduction from any new attendees (5 min)

New attendees: Camilo Guzman, Philippe Laissue, Frederica Paina.

### 4. Finding a date for the monthly regular WG 9 meetings, date of next meeting (5 min)

Proposal is to select the first Tuesday of the Month. Time slots are limited to accommodate all but we can be flexible for some meetings and favour other time zones. 16:00-17:30 CET accepted

### 5. Publication(s) update (15 min)

#### a) White paper – suggestions for next WP project

WG8 have completed the detailed QUAREP WP this has been submitted to arXiv,

#### b) Nature methods

RN: aim to submit before end of Feb, Claire Brown to coordinate the paper.

CS-D-C: the QUAREP nature methods publication will be coordinated with other publications discussing imaging metadata. Plan is to have a meeting with the editors of nature methods to discuss this. Need to invite members of QUAREP to this meeting. RN: GN, Ulrike Boehm to attend with RN.

#### c) J Microscopy

GN is working submitting this to J Microscopy as open access. GN: having problems completing the author lists. We need to suggest reviewers that are not members of QUAREP – ideas to be sent to GN / RN.

#### d) Imaging and Microscopy

RN: they have requested a 2000-4000 word article to advertise QUAREP by the 12<sup>th</sup> Feb! for the next issue. RN: may be better to postpone for the next issue (May/June). AL/GN: may need to be careful with overlap with other QUAREP publications. RN: Imaging and Microscopy and is linked to J microscopy is not peer reviewed and this is of lesser concern as it will be advertising for QUAREP.

## **e) Other ideas? – Author contributions / lists**

RN: author we need rules for author lists for QUAREP. At the last chair / co-chair meeting we had a meeting poll about the WP.

AK: GBI – important to demonstrate community participation so broad author lists can be advantageous. But need to recognise those that have had a major input into the publication. So there may be two types of publication: a community (with wide-representation) and a technical publication (recognising those that have had input).

AS: these will be scientific publications so need to follow the authorship rules. Only those that have inputted into the publication should be included. Those that have inputted more should be recognised for this.

CS-D-C, JF-R: agree with both above statements.

JF-R: could through the order of the authors reflect input into the publication. Can also help to motivate participants.

RN: WG should produce attendance lists which will make it easy record participation and input.

AL: we should come up with some guidelines to discuss at the chair/ co-chair meeting. Should also head-off possible issues down the line.

## **6. Funding opportunities (5min)**

RN: we need to find funding for QUAREP to part-fund a dedicated admin, scientist and IT person (80-90k Euros). We also need improved cloud server that will allow us to incorporate images and OMERO.

RN is talking with OMERO support for a dedicated OMERO Installation for QUAREP.

AS: membership fee? Need to fund a person to take care of the administrative overhead or the initiative will fail. RN is against the membership model.

JF-R: could adopt a funding model similar to NEUBIAS – [COST](#) who fund collaborative networks.

RN: other options could be Carl Zeiss foundation or direct from industry.

AK: Horizon Europe funding possibility for reproducibility of science. FP: not that she is aware of. Will also bring up with [EMBL](#). We could also wait for a few months until we have wider industry participation and then raise the funding question with industry participants then.

RN is having to devote too much time to admin & website. German research foundation may be receptive to a funding application to support QUAREP (50% FTE).

We also need improved cloud server that will allow us to incorporate images and OMERO.

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AK / CS-D-C: Crowd / subscription funding model?

**RN to also approach Science Europe**

## 7. New working groups (20min)

- a) **WG11(publication standards) – update from meeting 28/01/21**
- b) **Live-cell imaging WG**
- c) **Phototoxicity**
- d) **Sample preparation**

*(Philippe Laissue – to bring in feedback from Phototoxicity community meeting)*

PL: 2 day virtual meeting in Jan 21. Some of the organising committee also are members of QUAREP. Meeting restricted to 20 participants:

## Phototoxicity - the good, the bad & the quantified

### Organizing Committee

Claire Brown, McGill University  
Deirdre Kavanagh, University of Birmingham  
Philippe Laissue, University of Essex  
Chas Nelson, University of Glasgow  
Maddy Parsons, King's College London



[plaissue@essex.ac.uk](mailto:plaissue@essex.ac.uk)

Virtual meeting Jan 19 & 21, 2021

Kindly sponsored by



European Microscopy Society

and run by



Hari Shroff, National Institute of Biomedical Imaging and Bioengineering, US  
Jennifer Waters, Harvard Medical School, US  
Tanya Whitfield, University of Sheffield, UK

Joerg Bewersdorf, Yale University, US  
Robert Campbell, University of Alberta, CA  
Youssef Chebli, McGill University, CA  
Teng-Leong Chew, Janelia Research Campus, US  
Siân Culley, University College London, UK  
Davide Danovi, King's College London, UK  
Anja Geitmann, McGill University, CA  
Laurent Gelman, Friedrich Miescher Institute, CH  
Campbell Gourlay, University of Kent, UK  
David Grunwald, University of Massachusetts Medical School, US  
Alex Laude, The Bioimaging Unit, University of Newcastle, UK  
Anne McKinney, McGill University, CA  
Dan Mulvihill, University of Kent, UK  
Glyn Nelson, University of Newcastle, UK  
Alison North, The Rockefeller University, US  
Raghuvver Parthasarathy, University of Oregon, US  
Emmanuel Reynaud, University College Dublin, IE

## Raise awareness

- Educate researchers; provide advice, examples, recommendations
- Be **realistic** about what people are likely to adopt
- Avoid being **overwhelming** & potentially **counterproductive**
- **Levels of recommendations** (and with it, conclusions that can be drawn): Essential and desirable
- risks of phototoxic effects in a live imaging study need to be addressed

## Stay positive

- Well, mostly: Citing examples of where it went wrong (or could have) is important
- Workshop title not “Death and destruction by fluorescence excitation”, but e.g. “Best practices in live imaging”

## Small, short, ready & feasible

- Not e.g. entire conference on photodamage
- Better: Small contributions that can be set up at short notice and/or consumed with ease
- **‘drive-by’ presentations** and workshops
- **Public Service Announcement** videos
- **standard presentation slides** for researchers and core facility staff who would like to include the topic in their own presentations

## No size fits all

- Phototoxicity multi-factorial, very sample-dependent
- No ‘standard’ sample; no generic way to test for phototoxicity
- Not unrealistic goal of providing protocols for all available experimental setups

Individual experimentalists will still have to:

- access any **published data** available around **specific applications**
- conduct appropriate studies to identify **control experiments** which are contextual to the cells, probes and microscopy platforms to be used
- Our task: **lower the energy barrier** for researchers to do this by providing examples, advice and references aplenty

**Widen perspective** – not just photodamage

**Goal: reduce artifacts, improve discovery → QUAREP-LiMi**

## Keep quantifying

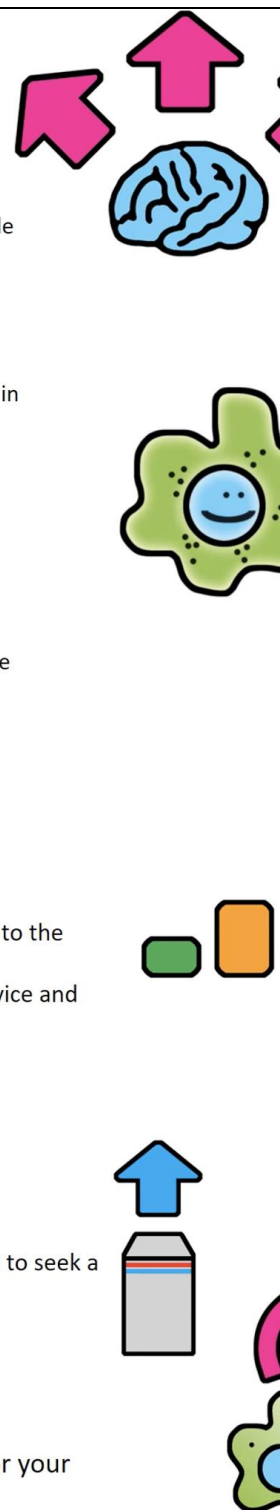
- editorial (Nat Meth Oct 2018, 15, p 751): “the time is right for developers and biologists to seek a more quantitative understanding of the effects of light on samples.”

→ Sensitive, reproducible biological readouts & assays (relative)

→ Power measurements (towards absolute) – WG1 (LG)

(but: Power measurements alone cannot replace an assay of biological activity for your particular sample to check for phototoxicity)

## Next Steps



Keen to align with QUA

**AI** for image restoration

**Widen participation**

- Researchers and trainees
- Imaging facility staff
- Scientific publishers & manuscript/grant reviewers
- Optical instrument & software manufacturers

**Next steps:**

- This meeting 😊
- FocalPlane blog article
  
- Short videos: PSAs, perhaps iBiology
- International microscopy courses / workshops; include it there
- RMS MMC
- Mini-symposium at ASCB
- Platform for quantified studies?
  
- Presentation slide collection; pull teaching materials together
- Reference collection
- Glossary / Dictionary
  
- Primary articles on phototoxicity
- Nature Methods special issue on QC in microscopy?

Keen to align with QUAREP.

## QUAREP-LiMi WG thoughts

- phototoxicity very much ties in with sample prep and other best practices
- WG for sample preparation
- sample preparation; huge topic with IF, expansion, stains/dyes, mounting media etc.
- recommendations from sample prep to image acquisition to phototoxicity assessment to reporting it: long list
  
- Single working group for this – too large?
  - uncouple the image acquisition/phototoxicity in some way from this; have it at least as a subgroup
  - focus on recommendations/guidelines/best practices for live imaging



### Thoughts and suggestions:

Sample preparation is a huge topic and within the scope of the live-cell imaging WG cannot be considered fully.

May need to divide the WG into i) phototoxicity / photodamage and ii) live cell imaging sub-groups.

AK: for Global bioimaging phototoxicity discussion is highly relevant and could be incorporated into the training programme for core facility management. Could also link in and overlap with other topics.

PL: Cyto2021 – are QUAREP in contact with cytometry community? They have been involved with phototoxicity. Could join forces with this group.

RN: most of the working groups in QUAREP are 'technical'. We need a consensus if we move into more applied subjects such as phototoxicity and live-cell imaging. Should be discussed with the WG chairs and also at the QUAREP general meeting. Inevitably when 'biology' is included the subject matter becomes more diverse and 'complicated'.

If we include this, WGs will need to think about how they can feed into and work with a 'live-cell / phototoxicity' WG.

AS: agrees that this is an ambitious subject to tackle at the moment before WGs have agreed on methods and protocols to measure the intensity of incident light.

CS-D-C: very relevant at the current time cuts across other WGs. We should be considering it. Supports the incorporation of a 'live-cell' imaging WG into QUAREP.

GN: agrees that we need to agree on how from a technical side, we can measure incident illumination. But need to come up with minimal metrics to allow us to assess the biological sample at the same time. This would benefit QUAREP.



- General agreement that the guidance to assess phototoxicity is limited and awareness needs to be raised. Need Education. It would align with the aims of QUAREP.

## e) The environment

Probably not a need to have a dedicated WG for this.

## f) Training

- i) **User**
- ii) **Core staff / microscope custodian**

RN- general agreement that training should be considered and tackled by each WG

## 8. ISO-norm update (5 min)

Not discussed

## 9. WG9 support for other WGs (10 min)

*(feedback from the first WG chair / co-chair meeting)*

RN: Feedback from the 1<sup>st</sup> WG chair meeting was that chairs would appreciate support from WG9 as they can feel overstretched in terms of time and technical questions.

This needs to be discussed at the chair meeting.

Support could be in the form of administrative help but we will need to think carefully about how we can provide technical support. Perhaps liaise with experts and manufacturers?

JF-R: perhaps this needs to be an open discussion in the groups?

## 10. QUAREP publicity (15 min)

- a) **Logo** – discussed at chair / co-chair meeting
- b) **Website**
- c) **Twitter**
- d) **LinkedIn** – we have a LinkedIn profile need to discuss if this is worth it.

*Next meeting first Tuesday of the month – 2<sup>nd</sup> March 4pm CET*

## Minutes

Phototoxicity community meeting held at the end of January, agreement that the mission of the phototoxicity group align well with QUAREP.

### ACTION items

Action Item	Who	Status
Authorship rules for QUAREP – develop set of guidelines for chair/ co-chair meeting discussions	AL	
Approach science Europe for funding for QUAREP	RN	
AK to link PL with global bioimaging	AK	
RN / PL to present proposal for live-cell / phototoxicity WG for discussion at chair / co-chair meeting	RN	
RN to discuss WG support at chair / co-chair meeting	RN	

