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To Whom it may Concern,

On behalf of the Micron Oxford Advanced Bioimaging Unit, I am writing to express our strongest support for the continuous development of the fairSIM open source structured illumination reconstruction software by Dr Marcel Müller. As outlined in detail below, we consider the fairSIM project of outstanding relevance for Micron and the wider imaging community and therefor have been promoting it since its first publication in 2016. As part of our commitment, Micron hired Dr Müller for 3 months in 2017 to begin implementing a full 3D reconstruction algorithm within the package.

Micron Oxford combines an advanced imaging facility providing access of state-of-the art microscopy to the Oxford research community, with the development of cutting-edge bespoke instrumentation and techniques. Structured illumination microscopy (SIM) has been a major strength within Micron for more than 10 years underpinned by a track record of high-quality publications. Having both commercial and bespoke SIM instruments in use, we have benefited significantly from the release of open source reconstruction software. We plan to continue our development of SIM microscopes to widen their biological application, with projects for correlative cryo-imaging and adaptive optics to enable fast and deep live cell SIM imaging nearing completion. Having open source software to enable reconstruction of images from these bespoke instruments is absolutely essential.

Although commercial instruments have their own reconstruction software this comes with little information about the algorithms used and often significant usage restrictions in the software license. By utilising open source software, we are able to unequivocally know what algorithms are applied, and enable sharing of developments with other labs without commercial software restrictions. This is particularly relevant for SIM reconstruction software as the commercial options are generally only licensed for use with the instruments that they are supplied with. This means that processing cannot be reproduced without access to the original instrument type, with a large associated costs. Additionally, the presence of features within fairSIM have pushed commercial system builders to integrate similar features in their systems.

In summary, open source SIM reconstruction software is of significant benefit to all SIM users and further funding of this project would be of great benefit to both the SIM, and the bioimaging community as a whole.

Ian Dobbie