



**Lawrence Berkeley
National Laboratory**

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NeXus International Advisory Committee

Dear members of the NeXus International Advisory Committee,

I am writing to nominate Aaron S. Brewster, an employee of the Lawrence Berkeley National Laboratory (LBNL), to join the NeXus International Advisory Committee as a representative both of the Advanced Light Source and LBNL in general. Aaron is a post-doctorate fellow working for Nicholas Sauter in the Computational Crystallography Initiative, specializing in software development in support of X-ray free-electron laser (XFEL) sources and synchrotron sources.

Recently, as part of the DIALS project (Diffraction Integration for Advanced Light Sources), Aaron has been collaborating in-depth with Herbert Bernstein (Dowling College, Oakdale NY, USA) and Graeme Winter (Diamond Light Source, UK) to implement ImageCIF/CBF support for XFEL detectors at the Linac Coherent Light Source at the Stanford Linear Accelerator. The multi-tile detectors at SLAC have specific geometries that require precise representation by way of extensive metadata, suitable for representation by ImageCIF. However, the very high framing rates of XFEL sources, 120Hz at the LCLS, makes storing the data as individual CBF files less practical. To this end, Aaron's next project will be to incorporate Herbert Bernstein's recent work on ImageCIF/NeXus concordance into cctbx.xfel, the data processing suite being developed by Nick Sauter's group. The HDF5/NeXus container format is ideal for these large volumes of data.

I anticipate Aaron being able to contribute to the overall NeXus discussion, not just from an XFEL perspective, but also from a big data perspective in general. For example, as the Eiger detectors from Dectris become more widely adopted, their high framing rates will lend themselves to a NeXus representation. Aaron is interested in being a part of that discussion, and how it relates to the data reduction required for the processing of crystallographic diffraction patterns.

If you have any questions regarding this nomination, feel free to contact me.

Yours sincerely,

Paul Adams, Ph.D.

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