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# SA Feeder Infrastructure overview and issues

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Effective use of Large Scale Research Infrastructures (LSRI) requires considerable local infrastructure to first be in place. In the case of a LSRI for analysis of samples or materials, a strong local capacity in acquisition and preparation of research material is required as well as an established excellence in the understanding of that material in the general research context. The proposers of experiments at analytical LSRIs need to demonstrate the research material has the capacity to yield new information and insight into a specific research programme. This material or class of materials therefore needs to be first studied locally. Both the acquisition / production and pre-charaterisation / preliminary studies of the research material require local infrastructure. In the context of the structural biosciences, a local or regional laboratory for bio-crystal growth and characterisation is necessary. The production of the samples requires a well equipped biological and chemical laboratory with advanced equipment, such as robotic apparatus for high throughout production of the crystals, and ancillary and major equipment for the characterisation of these crystals. In addition, advanced local equipment (lab scale x-ray diffraction equipment and electron microscopy equipment) whereby the general research programme is established and advanced is crucial. Suitcase science alone is not sufficient. Indeed, this phase of the research is still highly competitive and impactful. It establishes the base from which successful proposals to the LSRI can be made, and provides the main part of the training for the research team, especially the students. The situation is very similar for all the other sciences and industry programmes which plan to access the LSRI. This talk reviews the situation for such feeder equipment in local laboratories, which then enable effective access of the LSRI.

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