

Data Standards for Flow Cytometry

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ABSTRACT

Flow cytometry (FCM) is an analytical tool widely used for cancer and HIV/AIDS research and treatment, stem cell manipulation and detecting microorganisms in environmental samples. Current data standards do not capture the full scope of FCM experiments and there is a demand for software tools that can assist in the exploration and analysis of large FCM datasets. We are implementing a standardized approach to capturing, analyzing, and disseminating FCM data that will facilitate both more complex analyses and analysis of datasets that could not previously be efficiently studied. Initial work has focused on developing a community-based guideline for recording and reporting the details of FCM experiments. Open source software tools that implement this standard are being created, with an emphasis on facilitating reproducible and extensible data analyses. As well, tools for electronic collaboration are being developed to assist the integrated access and comprehension of experiments to empower users to collaborate on FCM analyses. This coordinated, joint development of bioinformatics standards and software tools for FCM data analysis has the potential to greatly facilitate both basic and clinical research - impacting on a notably diverse range of medical and environmental research areas.