ACS FALL 2023

HARNESSING THE **POWER** OF DATA

San Francisco CA & Hybrid
August 13-17th
Abstracts due April 4th

HELPING CHEMISTS MANAGE THEIR DATA

(HOSTED BY CINF)

More experiments than ever before are being conducted by scientists and researchers worldwide. On the other hand, producing a huge amount of data does not always result in its effective capture, dissemination, and reuse. Most labs still collect data manually as they are not digitized. The margin of error in data collection and its impact on the caliber of research are additional factors. The ability to instantly access matched data sets is another difficulty. More work is required to convert data types into common machine-readable formats rather than storing data in PDF files. These formats make it possible for users to find, access, interoperate, and reuse (FAIR) data and research findings. Many scientists are reluctant to publish data - not for technical reasons but for psychosocial reasons that have various root causes: e.g. a lack of error culture or pressures due to the publish or perish paradigm. Not only are technological solutions required for this paradigm shift but the accompanying necessary cultural change and addressing the psychosocial root causes are at least equally as important. In this session, we are keen to discuss not only these issues but also other factors that may be holding researchers back from using new technologies for data management and publications: lack of support by their organization or local infrastructure or who pays for the implementation (including staff-hours)? Who pays for the training? In this session, we'll concentrate on researchers' point of view of receiving training and using the FAIR data principles to their advantage without placing an additional burden on their existing workload. This implementation is anticipated to begin with the generation of experimental data, preparation of the results for publication, and consideration of the needs of funders and publishers in this area. Approaches, tools, and technologies already exist and are being developed worldwide.

ORGANIZERS:

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TOPICS INCLUDE BUT ARE NOT LIMITED TO:

- Developer/researcher practices in data acquisition and storage (e.g. file naming and folder hierarchy),
- Electronic Lab Notebook (ELN) and integration with instruments data processing software transferring data and metadata to repositories (Smart Lab)
- Error in data generation
- Trust and error cultures in working groups and its effect on error in data collection, and processing
- National and international initiatives in science data management

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