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FAIRness and Immunogenetics

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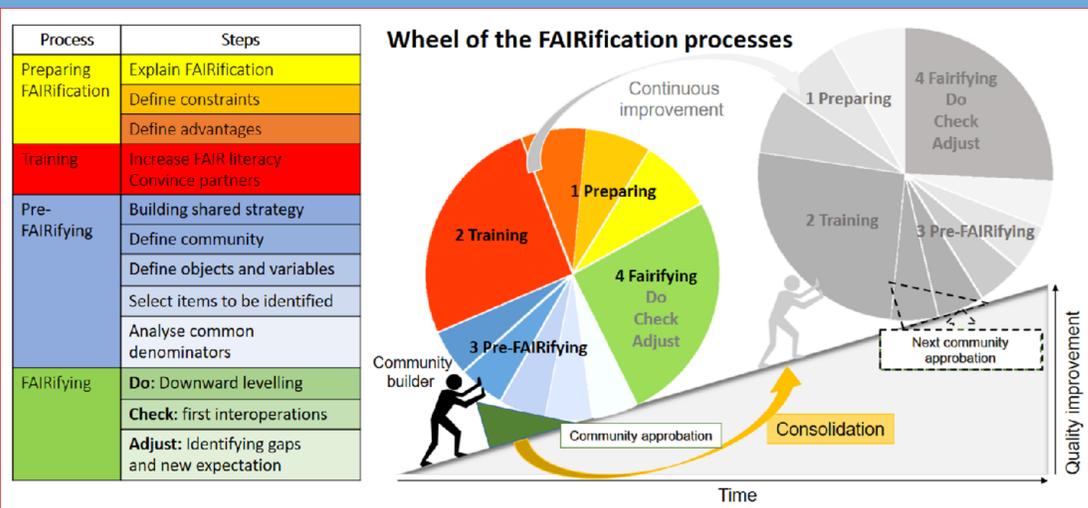
For many decades, the immunogenetics community has been among the frontrunners in sharing data and samples, ensuring a great scientific progress in this domain. International histocompatibility workshops and scientific meetings in immunogenetics societies as EFI and ASHI have largely contributed to this progress.

In many other fields it has now been recognised that research data sharing is crucial. The Research Data Alliance (RDA) was launched in 2013 and its European branch is active in implementation of open science policy promoted by the European Commission and many institutions. The goal is to build a social and technical infrastructure to enable open sharing and re-use of data.

However, among the obstacles for sharing is the lack of recognition of the work necessary in order to make data available. To address this question, we established the “Sharing Rewards and Credit Interest Group” (ShaRC IG) in the framework of RDA in 2017 to improve academic crediting and rewarding mechanisms for scientists who strive to organise their data for potential reuse. This implies that data and related materials comply with international standards and respect the FAIR principles:

Findable / Accessible / Interoperable / Reusable.

Such data can be read by machines, which is an enormous advantage with big data. In practice, making data FAIR requires considerable time, energy and expertise and it is not always clear who should contribute to the process. As a result, except in specific communities routinely dealing with big data (e.g. nuclear physics, astronomy or genetics), the FAIR principles are not considered a priority and are not implemented rigorously across disciplines & countries. Specific projects such as FAIRplus, an Innovative Medicine Initiative (IMI) EU supported project are dedicated to implementing FAIR principles in the biomedical domain.



The FAIRification process has been schematised by David et al (2020). There are 4 main phases and each of them needs to be approved by the community. The “preparing” and “training” phases are necessary before the pre-FAIRification phase taking into account important parameters. After the final steps ‘check’ and ‘adjust’, the data are ready for being machine-read and reused. The process of FAIRification needs the help of data management professionals and this should be part of institutional strategies. It would be pertinent to consider including training on FAIR principles and steps towards FAIRification in immunogenetics training and we suggest that the EFI education committee considers the issue.

In the era of open science it becomes essential to include sharing practices and activities in the evaluation system of scientific outputs as well as in the training of young investigators. Involving the scientific communities and professional actors is necessary to achieve a realistic, equitable and implementable scheme. Many historical or recent discoveries in immunogenetics have been based on exchange and sharing. Hence exploring criteria, practices and mechanisms that underpin sharing practices in such a community is of general value for the whole scientific and medical world. A case study involving the immunogenetics community could be organised as part of the ShaRC interest group, including questionnaires, specific sessions and comments on possible recommendations. One of the issues to carefully consider before implementing data and sample sharing is the adequate protection of personal data in line with the General data protection regulation (GDPR). General recommendations for such issues are an integral part of the RDA guidelines devoted to COVID-19 data sharing, a pressing domain worldwide.

In collaboration with Ubiquity press, the Open Journal of Bioresources (OJB) was created in 2014. Bioresources include not only data but also biological collections. OJB is a peer-reviewed open access journal with short papers describing bioresources dedicated to human biomedical research, providing the authors with a citable informative reference and a DOI (Digital Object Identifier). This is part of the recognition and rewarding of such important work. Finally, the citation of bioresources in journals should follow the format CoBRA as described by Bravo et al (2015).

CONCLUSION

Open science and data/sample sharing are key elements in the progress of scientific knowledge. It is essential to include sharing practices and activities in the evaluation system of scientific outputs. In Immunogenetics, many historical or more recent discoveries were fostered because of sharing practices. The re-use of big data requires implementation of FAIR principles to be efficient. FAIRification needs to be adapted to each community. A case study involving the Immunogenetics community could be organised in collaboration with the SHaRC IG. For further information, contact anne.cambon-thomsen@univ-tlse3.fr.

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