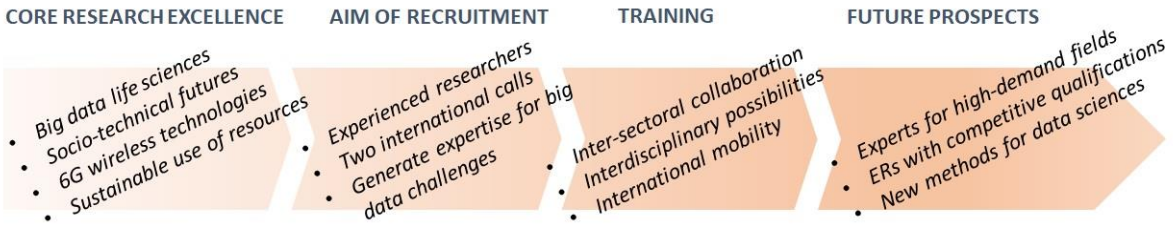
From Big Data to New Science and Practical Solutions

“Data4Healthcare”

Co-funded by
the European Union

Executive summary of the program

The schematic diagramme below summarises the structure of the **COFUND MSCA Data4Healthcare programme** and its outcome with trained ERs having broader career possibilities in different sectors.



The Data4Healthcare programme:

- is at the moment carried out with 6 private companies, 3 public organisations, 1 university, more partners are possible but requires grant agreement amendment
- integrates Postdoctoral researchers into intersectorial Oulu Innovation Alliance community and OuluHealth ecosystem
- brings together UOULU's multidisciplinary more than 70 specialist disciplines involved in data-related research
- integrates Postdoctoral researchers into the international science community and intersectoral ecosystems
- strengthens Postdoctoral researchers' unique new knowledge and professional competences, therefore enhancing their long-term employment opportunities in both the academic sector and businesses internationally
- offers Postdoctoral researchers´ excellent opportunities to work and carry out data-related research in private and public ecosystems closely with companies

Important facts for participating units:

- UOULU research groups must provide a **description of their research topics** that tie in with the Data4Healthcare programme's theme **by November 30**. Description can be prepared **in co-operation with non-academic associated partner**.
- The **applicants may freely choose the research group based on the descriptions of the research topics** and independently draw up a proposal for a research project. The applicant may also freely plan and propose a research project, indicating an additional potential participating research site in UOULU.
- Post Doctoral researchers' **work contracts** are only for UOULU. Data4Healthcare encourages researchers to work at the interface between the academic world and non-academic organisations. Intersectorial exposure is increased by enabling a three-month **secondment in Partner organisations.**
- The Post Doctoral researchers must be in possession of a **doctoral degree at the deadline of the programme's call**. In addition, applicants who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will be considered eligible to apply according to MSCA COFUND guidelines for postdoctoral programmes. They must hold a doctoral degree on the time of the recruitment to the programme.
- The Post Doctoral researchers are required to **fulfil the EU MSCA mobility rule**, thus eligible applicants should not have resided in Finland for more than 12 months in the three years leading up to the application deadline.
- Every postdoctoral researcher will have at least **two supervisors**. Supervisors can be from any faculty of UOULU. **The principal supervisor**, who is always from UOULU and has to be a **professor, associate or adjunct professor**. In addition, **one or more co-supervisors** will be appointed **from the Associated partner(s)** hosting the postdoctoral researcher during their secondment(s).

- A ***Guide for Applicants*** will be prepared and made available for applicants. Applicants are provided information about the themes included in Data4Healthcare and they are strongly advised to familiarize with the **research units/groups available for recruitment in the Data4Healthcare programme**. The information about the research groups in UOULU with their research areas, and their potential ideas for the research projects are briefly described via web pages and in the *Guide for applicants* **with secondment possibilities** and contact details.

Quality of the research options in terms of interdisciplinary research options, inter-sectorality (mobility between the academic and non-academic sector) and international networking

Data4Healthcare offers research opportunities in research areas (see below) that are linked to UOULU's focus areas. This multidisciplinary approach presents huge opportunities for postdoctoral researchers to develop skills and competences. Data4Healthcare complies with the concept of individual driven mobility and allows **the freedom for the applicant to choose their research topic** as long as it fits to overall theme of "From big health data to new science and practical solutions" and to develop their research plan on the topic they choose to work within Data4Healthcare.

The research activities in Data4Healthcare constitute the highest-quality research projects built from the interests serving the intersectoral community. The **research ideas driven by the participating private and public sector organisations, as well as the participating research groups**, will be explored using the best methodologies and, where needed, by developing new methods.

The research areas offered by the programme can be divided into three themes:

Theme 1) Data as new resources in the society. The theme is focusing on the practical solutions which health and wellbeing data may offer, utilizing large datasets from population cohorts and registries. The theme increases capacity to harness information generated with molecular profiling technologies, such as genetics, transcriptomics and metabolomics, as well as utilizing data originated from wearable sensors. The aim is to understand health and disease and to study disease risks and prediction models by combining multiomic health and wellbeing data sets generated from various sources.

Theme 2) Health data management practices in RDI collaboration. An important aspect is to build capacity on the secondary use of data, health data privacy issues and creating trust in sharing sensitive data between several stakeholders in the RDI collaboration. The theme increases understanding on the legislation, ethical plans, R&D contracts between stakeholders, as well as about secure data processing environments.

Theme 3) Technical tools in data management and processing. Vast data sources require efficient tools for analyzing and handling the data to maximally utilize its potential. Predictive analytics, bioinformatics, novel computational and AI methods are bringing novel prediction models for health care. The use of breakthrough technologies and learn more about novel anonymization, edge computing technologies wireless communication and health data spaces will change the practices in data sharing, data transfer and data analysis in the future.

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