

BROThER: A network for digitalisation in biobanking to promote personalised medicine

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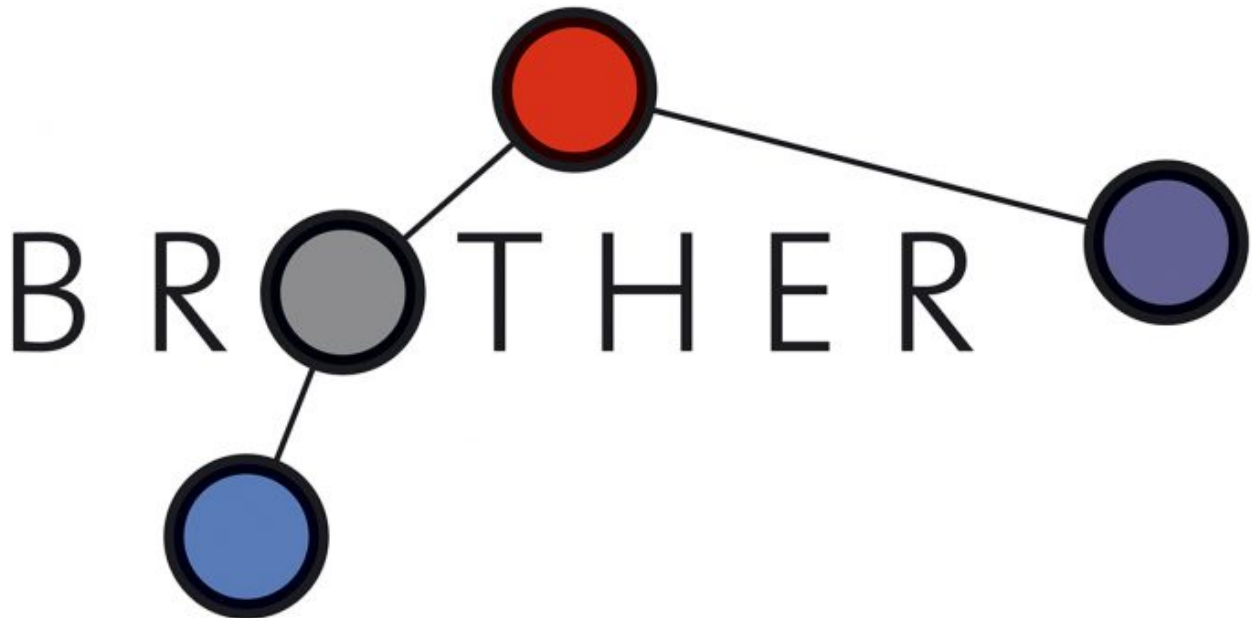


Fig. 1 The BROThER logo: The acronym BROThER stands for Biobank Research on Telemedical Approaches for Human Biobanks in a European Region. The round, dot-like figures represent the geographical locations of the project partners. The colours are that of the corporate identity of the related universities (blue for Munich, grey for Regensburg, red for the Faculty Hospital Pilsen and dark blue for Brno). The lines symbolised the interconnectivity between the partners without creating a closed network to demonstrate the openness for further partners (logo Design: “Grüne Kommunikationsdesign”, www.gruene-kd.de)

Christoph Brochhausen(1), Judita Kinkorova(2), Karl-Friedrich Becker(3), Dalibor Valik(4), Ondrej Topolcan(2) detail the marvellous work of BROThER, a network for digitalisation in biobanking to promote the use of personalised medicine

BROThER is a Bavarian-Czech project funded by the Bavarian-Czech Research Agency to optimise the cooperation between biobanks via digitalisation. To reach this goal, a student exchange programme was established to bring knowledge about new developments in the various hard- and software components dealing with tissue and liquid biobanking. In workshops and symposia, new methods are addressed to combine aspects of digitalised workflows to connect biobanks and facilitate common biobank projects.

Personalised medicine is one of the leading concepts in modern medicine and represents a fast-growing field of modern patient care. In this context, biobanking plays a crucial role to promote further applications in personalised medicine. Digitalisation represents great chances to optimise patient care and research but holds also some relevant risks. The chances of digitalisation are given in the harmonisation and consolidation of clinical data from different resources. With that, double documentations and errors during the documentation steps could be minimised.

Since research in personalised medicine needs highly specific and entirely characterised cohorts, the interaction of biobanks with further databases for clinical, laboratory and imaging data will become increasingly important. Good data integration from these different data sources represents a crucial prerequisite to build-up relevant collectives for basic and translational research. This is especially true when it comes to rare diseases, but also with a view to creating highly specialised and characterised cohorts a multicentre approach is mandatory, to ensure the inclusion of significant numbers of biobank specimens at the appropriate time.

Therefore, the interconnection of biobanks and network building is an important issue for the future development of biobanking. For biobanks in the clinical context, digitalisation to share information and knowledge automatically represents an important parameter. To admit modern technologies in hardware and software solutions in the existing biobank structure will be an important aim for the coming years. In this vein, the interaction and cooperation of biobanks from different countries have to overcome special challenges even if these countries are located within the European Union (EU).

BRoTHER (Biobank Research on Telemedical Approaches for Human Biobanks in a European Region) is an interconnecting project aimed to analyse the obstacles, which have to be overcome if clinically related biobanks from two national health care systems plan to work together. Beneath the aim to identify these obstacles, an important issue is to find solutions to enable the set-up of common biobank projects. BRoTHER will check how digitalisation could help to overcome obstacles and to improve inter-biobank project management.

A further important aim of BRoTHER is to disseminate the idea of biobanking and the idea of the relevant role of digitalisation of biobanking to young academics and to a broader public. BRoTHER is a project within a consortium of four biobanks, two in Bavaria and two in the Czech Republic. These are namely the biobanks of the University Regensburg, that of the Technical University in Munich, that of the Faculty Hospital of Pilsen and last but not least that of the University of Brno. This project is supported by a grant of the Bavarian-Czech University Agency (BTHA) with funding coming from the Bavarian State Ministry of Finance. The aim of funding is to promote the cooperation in a border region of two different healthcare systems with different healthcare and research infrastructures. Therefore, the project partners have the understanding to give a relevant example of inter-systemic cooperation.

BROThER is an acronym standing for: “Biobank Research on Telemedical Approaches for Human Biobanks in a European Region” addressing the digital approach for the optimisation of biobank cooperation. Furthermore, our acronym is dedicated to the phrase “Every man became a brother” in the European anthem; this should illustrate the strong commitment of the project partners to the European spirit.

Finally, BROThER clearly conveys the close relationship between the network partners, which comprise a very open and trustful way of interaction. To illustrate the vision of a closely related network a logo was designed by a professional communication design agency (<http://www.gruene-kd.de/>). The philosophy behind the brand development was to symbolise both the close connectivity of the partners and the openness of the network for potential new partners (fig.1).

One important tool to reach the goal of BROThER is a set-up of different interdisciplinary events. The backbone is a student exchange programme with site visits of students in all partner biobanks to make them familiar with different techniques in biobanking and related research.

Furthermore, we have established a summer school, which will be held every two years at one of the partner sites. The summer school addresses the tremendous technical developments in sample preparation, storage techniques and IT-infrastructure, which will influence the field within the next years rapidly. Actually, the recent EU data protection regulation provides a new legal framework for using biobank data and leads to challenges in world-wide biobank cooperation and sample exchange which was an important issue during the first summer school held in Regensburg end of September 2018.

In hands-on courses about the latest technical developments in biobanking, the participants had the opportunity to learn and discuss the huge progress in biobanking with international experts in the field and learn how to implement the new data protection regulation in international projects both within and outside of the EU. To the best of our knowledge, that is a unique format in the field which brings undergraduate and graduate students together with post-docs, researcher and clinicians to learn together how digitalisation could be integrated with the infrastructure of biobanking.

One last thought is that digitalisation in health care and biobanking will be the challenge of the coming decades. BROThER aims to seize this challenge to make students and researchers fit for digitalisation in biobanking.

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Please note: this is a commercial profile

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