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# CLONE: Clinical Trials in Oncology in the New Era of Omics, Big Data, and Modeling. A BMBF funded Summer School of the Krukenberg Cancer center Halle (KKH) in Systems Medicine

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## Purpose

Innovative data in cancer biology and bioinformatics are revolutionizing the understanding of cancer and have profound implications on the design of clinical trials with novel ethical and legal challenges. BMBF funded Summer Schools could be a platform facilitating interdisciplinary knowledge transmission from research to healthcare.

## Methods

CLONE (a five-days program) was planned to bring physicians and researchers from various disciplines in Systems Medicine together to illuminate personalized oncology. The proposal of the KKH was accepted within the BMBF e:Med Summer school grant in September 2018. Participants from Germany and abroad were competitively selected by a panel of experts based on submitted abstracts. The faculty included thirty-eight national and international experts in their fields.

## Results

CLONE took place from 24-28 June 2019 in Halle (Saale). A total of 23 participants from five countries qualified. Table 1 shows the program with the topics.

## Conclusions

BMBF funding allowed a scientific exchange across different disciplines relevant for cancer research and treatment. The need for collaborative programs to analyse the vast amount of research data and how to translate the results into prognostic biomarkers and tailored clinical studies with targeted therapies were emphasized. International summerschools can offer an incentive to look outside the box.

Day 1	
Stratified versus personalized cancer medicine	
Emerging developments in Omics and Big Data Analytics in Life Science	
Evening program	
City Tour (Discover the highlights of Halle/ Saale, the more than 1.200- years-old Handel City)	
Day 2 Omics	
Genomics	
Epigenomics	
Posterwalk I	
Proteomics	
Workshop I & II	
Workshop I: Molecular Pathology	Workshop II: Proteomics
Evening program	
Guided tour through the famous Meckel anatomical collection	
Day 3 Big Data	
Bioinformatics	
Modeling and Simulation	
Posterwalk II	
Real world Data and more	
Real world Data and clinical application	
Day 4 Clinical Trials in the era of Big Data	
Planning and designing a clinical trial	
Preparing a trial	
Posterwalk III	
Science versus regulation	
Workshop I & II	
Epidemiology - NAKO	Clinical trials
Evening program	
Education and its Dignificance for the World-Visit the Franckeschen Stiftungen	
Day 5 Engaging, protecting, and communicating with patients	
Ethical & legal considerations	
Patient's perspectives	

Table 1. Program

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