Dagstuhl Semiar 15431
Genomic Privacy

Monday October 20

9.00 – 10.30	Welcome and introduction
10.30 – 10.45	*Break*
10.45 – 12.00	**D. Bogdanov**, Privacy-preserving bioinformatics with general-purpose SMC
12.00 – 13.30	*Lunch*
13.30 – 14.45	**A. Molyneaux**, Challenges faced by Hospitals using NGS for Diagnostics
14.45 – 15.15	**B. Malin,** Emerging Policies, programs, and Incentives in Genomics
15.15 – 15.45	*Break*
15.45 – 16.45	**X. Wang,** The NIH Genome Privacy Challenges: Bringing Security Technologies to Biomedical Users **E. Ayday,** Privacy in the Genomic Era
16.45 – 17.00	Wrap up of the day

Tuesday, October 20

9.00 – 10.30	**H. Zhicong**, GenoGuard: Protecting Genomic Data Against Brute-Force Attacks **F. Kerschbaum**, Efficient privacy-preserving deterrence of inference attacks on genomic data **A. Smith**, Robust Traceability from Trace Amounts
10.30 – 10.45	*Break*
10.45 – 12.00	**J. Fellay**, Genomic privacy in research and medicine: a view from the trenches
12.00 – 13.30	*Lunch*
13.30 – 15.30	**M. Naveed**, Controlled Functional Encryption **M. Blanton**, Efficient Server-Aided Secure Two-Party Function Evaluation with Applications to Genomic Computation **S. Simons**, Realizing differentially private genome-wide association studies **J. Raisaro**, On a Novel Privacy-Preserving Framework for Both Personalized Medicine and Genetic Association Studies
15.30 – 15.45	*Break*
15.45 – 17.15	**O. Kohlbacher**, Reality check - Implementing personalized therapies based on genomic data in a clinical setting" **F. Praßer**, Engineering data privacy - The ARX data anonymization tool **P. Verissimo**, e-Biobanking
17.15 – 17.30	Wrap up of the day

Wednesday, October 21

9.00 – 10.00	**P. Dabrock**, Privacy challenges in an era of biomarker-based and Big Data-driven medicine. Ethical considerations.
10.00 – 10.30	**K. Rohloff**, Applying Homomorphic Encryption for Practical Genomic Privacy

10.30 – 10.45	*Break*
10.45 – 12.00	Vote on workshop topics, formation of groups
12.00 – 13.30	*Lunch*
13.30 – open end	*Free afternoon*

Thursday, October 22

9.00 – 12.00	2 Workshops in parallel groups: • Usage models of genomic data • Inference control and de-anonymization
12.00 – 13.30	*Lunch*
13.30 – 14.30	Discussion of the workshop results in plenum
14.30 – 17.30	2 Workshops in parallel groups: • Architecture and middleware solutions • Data sharing across domains

Friday, October 23

9.00 – 10.30	Continuation of workshops started on Thursday afternoon
10.30 – 11.00	*Break*
11.00 – 12.00	Discussion of the workshop results in plenum, discussion on future steps
12.00 – 13.30	*Lunch and adjourn*

List of proposed workshop topics so far:

- Usage models of genomic privacy
- Architectural and middleware solutions for security and dependability of biomedical data
- Technical solutions
- Economics of privacy
- Synergies between technical solutions (privacy-by-design and such) and existing approaches (mostly legal/organizatorial)
- Enabling computation across data sets (different, mutually distrusting data owners)
- Combining differential privacy with cryptographic solutions
- Simplified genomic algorithms to enable easier computation
- Legal protections for genomic computation via cryptographic solutions
- Remaining private information that may leak after privacy-preserving mechanisms have been applied
- Privacy-preserving solutions for mitigating re-identification attacks from genomic data-sharing beacons