

Dagstuhl Seminar on Genomic Privacy

Proposed Agenda

Recommendations for speakers:

- *Bear in mind the diversity of participants; avoid jargon and acronyms and don't go into gory details*
- *Allow your talk to raise questions, not only propose solutions*
- *For questions arising during the talk, please try to avoid prolonged detours*
- *Leave enough time for questions/discussions at the end of the talk*
- *Facilitate and encourage inter-disciplinary discussions (as opposed to intra-disciplinary ones)*

(Day 0 (Sun. October 6) – Dinner available as of 18.00)

Day 1 (Mon. October 7) Expression of Requirements – Chair: K. Hamacher

Initial questions:

- What should be protected?
- For how long?
- Against whom?
- Who should be liable?
- Who would manage keys?
- What level of patient's involvement can be reasonably expected?
- What about dire situations (e.g., accessing data from an emergency room)?

9.00 Very brief self-introduction of each participant (30 seconds each, no slides)

9.15 Introduction of workshop by organizers

9.30 Regine Kollek (Universität Hamburg, DE): Meaning and Context. Some Social Aspects of Biomedical Genomic Data

10.00 Bradley Malin (Vanderbilt University, US): Genomics & Privacy: More Trouble than It's Worth?

10.30 Break

11.00 Satoru Miyano (University of Tokyo, JP): Personalized genomic medicine at Institute of Medical Science of University of Tokyo

11.30 Jacques Fellay (EPFL, CH) and Amalio Telenti (Lausanne University Hospital, CH): Needs and Myths in Medical Genomics

12.00 Short feedback round, building of afternoon workgroups

12.15 Lunch

13.45 Parallel workgroups on:

- Privacy and genomic/health data - what makes genomic data special (impact, handling, analysis, opportunities - think public health)
- Legal/organizational vs. sociological/society vs. technical approaches - is there a possible equilibrium? Might there be synergies? Or even "dis-synergies"?
- Scientific methods in human genomics and bioinformatics that set the requirements for crypto solutions

17.00 Optional short hike

18.00 Dinner

21.00 Kaesebrot: optional informal discussions in coffee-room

Day 2 (Tue. October 8) Possible Solutions – Chair: S. Katzenbeisser

Kinds of solutions to be addressed:

- Cryptographic
- Statistical
- Legislative
- Ethical aspects will be addressed here as well.

9.00 Presentations of Day 1 Workgroups

9.30 Andreas Peter (University of Twente, NL): A Practical Approach to Securely Outsource Genomic Sequences

10.00 Erman Ayday (EPFL, CH): Protecting and Quantifying Genomic Privacy

10.30 Break

11.00 Vitaly Shmatikov (UT Austin, US): Privacy-Preserving Data Exploration in Genome-Wide Association Studies

11.30 Emiliano de Cristofaro (UCL, UK): Whole Genome Sequencing Vs. Privacy: Efficient Cryptographic Protocols to the Rescue

12.00 Short feedback round, building of afternoon workgroups

12.15 Lunch

13.45 Parallel workgroups on:

- Cryptographic protocols for the protection of genomic data
- Anonymization of genomic data
- Legal and ethical aspects

17.00 Optional short hike

18.00 Dinner

21.00 Kaesebrot: optional informal discussions in coffee-room

Day 3 (Wed. October 9) (morning only) - Chairs: JP Hubaux and G. Tsudik

9.00 Presentations of Day 2 Workgroups

9.30 Discuss of aspects that were unplanned but need to be addressed for a synthesis/conclusion; Attempt to set up a future work agenda.

12.15 Lunch and wrap-up