

Jury Member Report – Doctor of Philosophy thesis.

Name of Candidate: Kseniia Safina

PhD Program: Life Sciences

Title of Thesis: Molecular epidemiology of socially important infectious diseases

Supervisor: Professor Georgii Bazykin

Name of the Reviewer:

I confirm the absence of any conflict of interest Frederick Matsen	10-11-2021 Date: DD-MM-YYYY
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The purpose of this report is to obtain an independent review from the members of PhD defense Jury before the thesis defense. The members of PhD defense Jury are asked to submit signed copy of the report at least 30 days prior the thesis defense. The Reviewers are asked to bring a copy of the completed report to the thesis defense and to discuss the contents of each report with each other before the thesis defense.

If the reviewers have any queries about the thesis which they wish to raise in advance, please contact the Chair of the Jury.

Reviewer's Report

Reviewers report should contain the following items:

- Brief evaluation of the thesis quality and overall structure of the dissertation.
- The relevance of the topic of dissertation work to its actual content
- The relevance of the methods used in the dissertation
- The scientific significance of the results obtained and their compliance with the international level and current state of the art
- The relevance of the obtained results to applications (if applicable)
- The quality of publications

The summary of issues to be addressed before/during the thesis defense

I was very impressed by this dissertation. It was well structured, with a background that clearly laid out , both in terms of biology and methods. The two results chapters were well developed. My only slight disappointment was in the Conclusions: this simply recapped what the two results chapters were about, and a bit of generalization. I would have loved to read a bit more about what the student would propose doing, policy-wise, in order to better control these viruses. This may seem out of scope, but at the same time it's the point of (genetic) epidemiology.

The content of the dissertation work is highly relevant to its topic, and indeed seems to be the definitive work on these datasets.

The methods used are completely appropriate, and indeed "cutting edge", for example using recently-added BEAST2 extensions. These software packages are not trivial to use, and their use here seems appropriate. I also note that the student is fully aware of the shortcomings of these methods.

This work is highly relevant to the study of the HIV and SARS-CoV-2 epidemics in Russia. As mentioned above, they appear to be definitive. The other study I could find about SARS-CoV-2 in Russia was substantially less advanced than this one. They are certainly up to an international standard.

Regarding applications, I would have liked to see a little more as described above.

The quality of both chapters is high.

Provisional Recommendation

I recommend that the candidate should defend the thesis by means of a formal thesis defense

I recommend that the candidate should defend the thesis by means of a formal thesis defense only after appropriate changes would be introduced in candidate's thesis according to the recommendations of the present report

The thesis is not acceptable and I recommend that the candidate be exempt from the formal thesis defense