Healthy Aging Signal Research Summary Report

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Hello Antong and Greg,

We would like to thank you for working with us on this interesting project. We appreciate your willingness to spend time and energy with us, as we know that you must have many other pressing matters. We have attached a technical progress report which covers our recent progress, provides some literature review, and outlines our future plans. Principally, it summarizes much of what we discussed last Friday. Over the past week we have been investigating potential biomarkers of aging in the PPMI Parkinson's Disease database. We have identified features we consider potentially important and performed exploratory analysis in two areas, blood chemistry and DNA methylation. Of these, the use of DNA methylation to predict age looks the most promising. At our last meeting you suggested that we might try to apply more sophisticated models such as XGboost to the methylation data. This work is underway. In addition, we have discovered a new database, the Epigenome Wide Association Study (EWAS) Data Hub (https://bigd.big.ac.cn/ewas/datahub/repository) that could provide us with large sets of DNA methylation data from a variety of tissues. We look forward to discussing the contents of this database with you, and how you think it might best be used to make a useful contribution to this field. Please let us know if you have any suggestions or concerns about our project in general, and we look forward to meeting again this Friday.

Sincerely,

Dan Cox
Eleonora Shantsilla
Yaxin Lei
Aaron Jacobson