2018-2019 Mid-Term Credibility Plan Review

PI: Michael Henson

		REVIEWER #1		REVIEWER #2	
#	Ten Simple Rules	Considered in the Credibility Plan?	Comments	Considered in the Credibility Plan?	Comments
1	Define context clearly	sufficient	Context of use is well defined as the prediction of neuron response, network synchronization, and response to external cues. It will be useful to define end-users of the models, e.g. developers themselves, other researchers, clinicians and end-point goal of modeling and simulation, e.g. scientific knowledge, clinical translation, etc.	sufficient	The model scope is well described
2	Use appropriate data	insufficient	Data will be generated in house, which implies relevance and traceability. Similarly data from funded projects and open literature implies traceability. However, it is not clear how assurance of data quality and relevance be warranted.	sufficient	The PI plans to use data developed in house, consulting the open literature as required.
3	Evaluate within context	sufficient	There will be an attempt to validate the model's capacity to predict circadian metrics. Model credibility plan also indicates code verification. It will be useful to note what will be an acceptable level of agreement between predictions and measurements in relation to the context of use.	insufficient	The PI provides information regarding validation, but does not sufficiently describe activities in the areas of code verification, UQ, or sensitivity analysis.
4	List limitations explicitly	insufficient	It will be useful to note how limitations will be conveyed to end-users, within code, as part of publications, online documentation, so on.	sufficient	The description states that assumptions and limitations are to be provided.
5	Use version control	insufficient	Awareness to version control is noted. The mechanism of internal version control should be noted. Is it an automated system such as GiT, or done manually?	insufficient	Version control is planned, but not yet implemented.
6	Document adequately	insufficient	The extent of documentation should be described. What does "fully documented" mean?	sufficient	The PI states that code documentation will be provided once the source code is made publicly available. Hopefully this is an on-going and continuous effort by each code developer Mark-up of the source code would facilitate re-use and future modification.
7	Disseminate broadly	sufficient	It will be helpful to note where and when this dissemination will be performed. "MSM Evaluation" is a vague timeline. I believe the simtk site of the project will be used for dissemination.	sufficient	Once the code is released, the PI plans to share not only the code and documentation, but also the source data used as part of the model development.

8	Get independent reviews	sufficient	It is assumed that the investigators already found a third-party evaluator.	sufficient	The PI has engaged (external) SMEs for code review.
9	Test competing implementations	sufficient	Proposing the models in different programming platforms is strong. Yet, this will test the implementation of the same M&S strategy in different programming languages, not necessarily implementation of different M&S strategy.	sufficient	The PI is developing the code on three independent and unique coding languages.
10	Conform to standards	insufficient	It will be useful to refer to guidance on “generally accepted standards for neural network modeling”.	sufficient	The PI is following accepted standards for neural network modeling. Are there any other elements of the platform besides the neural network?

General Comments

Reviewer 1:

I would like to thank the awardees for taking the time to respond to Ten Simple Rules in relation to their “Model Credibility Plan. My comments mostly ask for more detailed and specific information. When provided, these will likely increase the perceived credibility of the M&S workflow and in consequence, the models, of the awardees.

Reviewer 2:

Please consider investing some time into code verification to provide additional assurance regarding the reliability of the source code. Work in the areas of UQ and sensitivity analysis could also help to focus the research on the elements of the model that are the most critical to model accuracy.