



# 2018-2019 Mid-Term Credibility Plan Review

PI: James Schwaber

| # | Ten Simple Rules            | REVIEWER #1                         |   | REVIEWER #2                         |  |
|---|-----------------------------|-------------------------------------|---|-------------------------------------|--|
|   |                             | Considered in the Credibility Plan? | Comments  | Considered in the Credibility Plan? | Comments   |
| 1 | Define context clearly      | sufficient                          | The context of use is clearly stated for the most part. However, it would also be useful to delineate if the end goal is purely research, clinical or both, and to what degree.   | sufficient                          | Good concise definition of scope and context   |
| 2 | Use appropriate data        | sufficient                          |   | sufficient                          | All model data is described as being obtained within the investigation in a manner consistent for the modeling effort.   |
| 3 | Evaluate within context     | insufficient                        | Although a reasonable effort is made to define the data that will be used, further clarification is needed to understand their differentiation between verification and validation. The statement, " <i>The model will be validated against physiological data sourced from the same rat models of hypertension and heart failure that the molecular data was derived from.</i> ", implies a verification activity, but is being referred to as validation.   | insufficient                        | Concise description of planned validation and sensitivity analysis work (implies UQ). Verification needs to be added in future descriptions.                                       |
| 4 | List limitations explicitly | insufficient                        | The awardee indicate they have provided publications that explicitly state the limitations of the model. There should either explicitly reference these publications, or provide a synopsis as supplemental information.  | insufficient                        | . Link to limitations directed at publications, however, specific publications not identified  |
| 5 | Use version control         | sufficient                          | It would be preferable to have auto-versioning capability implemented for all aspects of the model. Especially for major changes. However, the fact they are using version control is noted, and if the intended use of the model is purely research, then the current version control method is sufficient. In this light, the researchers should explicitly state if the context of use of the model is for research and/or clinical application. If and when the model is going to be used for clinical purposes, automated version control method should be applied for stages of the model development and deployment. | sufficient                          | Version control adequately described to assess credibility of the process  |
| 6 | Document adequately         | sufficient                          | The researchers seem to be making deliberate effort to document the essential elements of their work. It is desirable, however, for the researchers to describe what is meant by "Development process is not being documented prior to publication"   | sufficient                          | Explicitly states that documentation not being addressed during this stage of development, but indicates future documentation plans. Sufficient information to assess credibility. |



## 2018-2019 Mid-Term Credibility Plan Review

|    |                                |            |   |            |   |
|----|--------------------------------|------------|---|------------|---|
| 7  | Disseminate broadly            | sufficient | A well thought out, and sustainable dissemination strategy is in place.   | sufficient | Model is made accessible at time of review and code generally accompanies publications(example publication would help assessment)                             |
| 8  | Get independent reviews        | sufficient | <p>The researchers appropriately point out the fact that there is minimal guidance on how independent reviews should be carried out. In this light, their current strategy to use laboratory colleagues who are not involved in the project to reproduce results is a sufficient place to start.</p> <p>As guidance to the researchers, it would be highly desirable to seek external independent reviewers unaffiliated with their laboratories. This may be done in conjunction with the dissemination process. For instance,</p> <p>(1) it may be worthwhile to release a “beta” version for evaluators to use the model and provide feedback to the researchers.</p> <p>(2) Have a breakout session or crowd source at relevant conferences and meetings to have a group of researchers spend an hour or so providing feedback on key aspects of the model.</p> <p>(3) work with IMAG and CPMS to organize an independent review breakout session or meetings in conjunction with the annual IMAG/MSM meetings.</p> | sufficient | Description of independent reviews is sufficient. Improvement would be seen by obtaining reviews from researchers not associated with the parent institution. |
| 9  | Test competing implementations | sufficient | Excellent strategy is in place.   | sufficient | Competing implementations are adequately described.   |
| 10 | Conform to standards           | sufficient |   | sufficient | Standards are described adequately to establish factor credibility  |

### General Comments

#### Reviewer 1:

All necessary feedback is provided in the comments section.

#### Reviewer 2:

Thanks submitting a very complete assessment of how the project’s credibility plan maps the CPMS TSR. Although some factors are not yet being address, this plan took the time to adequately establish to actual status of each factor allowing credibility to be unbiasedly assessed. That effort is much appreciated. Recommended areas for improvement include communicating verification activities and more direct links explicitly communicating model limitations.