These tables are the in-house checklists used for the UW Model Repository at www.physiome.org

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | STANDARDS.6. UNCERTAINTY QUANTIFICATION: | Auth | 2nd | Note |
| Group 1: Identification of UQ in data, model, computation, parameters | | |  |  |  |
|  | | Model Name and No: |  |  |  |
|  | | Code verified, runs correctly. See STANDARDS.4VERIF |  |  |  |
|  | | Diagrams for UQ evaluation? |  |  |  |
|  | | Reference to UQ approaches and methods |  |  |  |
|  | | Methods chosen here |  |  |  |
| Group 2. DATA UNCERTAINTY: UQ dependence on data | | |  |  |  |
|  | | Experimental data reproducible? |  |  |  |
|  | | Correlation structure in data sets |  |  |  |
|  | | Description of data, noise, shapes of pdfs |  |  |  |
|  | | Critical missing data that would constrain solutions |  |  |  |
|  | | Constraints from literature. Relevance (species, age, sex, etc) |  |  |  |
| Group 3. INPUT and ENVIRONMENT UNCERTAINTY | | |  |  |  |
|  | | Variability in ICs, Input functions and in assumptions about exper. conditions |  |  |  |
| Group 4. PARAMETER UNCERTAINTY: | | |  |  |  |
|  | | Sensitivity functions. How to plot. Why useful. Notes. Use same colors. |  |  |  |
|  | | Joint sensitivities for partially correlated parameters |  |  |  |
|  | | Loops: stepped setting to illustrate behavior |  |  |  |
|  | | Optimization re data: Confidence, descrip, Correl in covariance matrix |  |  |  |
|  | Parameters sets: Description and rationale for each param set, Notes | |  |  |  |
|  | | Parameters chosen for MonteCarlo. Sensitivities, lit data, constraints |  |  |  |
|  | | Magnitudes of effects on systems behaviors (function space) |  |  |  |
|  | | Ranges and shapes of param pdfs to use in MonteCarlo; |  |  |  |
|  | | Ranges and shapes of cross section through output trajectories |  |  |  |
|  | | Selection of region of predicted responses to characterize |  |  |  |
| Group 5. MODEL STRUCTURAL UNCERTAINTY: | | |  |  |  |
|  | | Modules most subject to uncertainty |  |  |  |
|  | | Modules insensitive for the particular data sets |  |  |  |
|  | | Modules most critical to the need to predict a chosen outcome |  |  |  |
|  | | Notes defining contents of each situation, figure or par set |  |  |  |
|  | | Relation between parameter and model uncertainties |  |  |  |
|  | | Alternative models: Testing by module substitution. Randomized? |  |  |  |
| Group 6. Assessing Uncertainty Quantification: | | |  |  |  |
|  | | Identify major sources of Uncertainty (data, noise, model, params) |  |  |  |
|  | | Meaningfulness and implications of uncertainty |  |  |  |
|  | | Potential means of Reducing Uncertainty |  |  |  |
|  | |  |  |  |  |
| Group 7: Scientific Publication: See STANDARDS.7.PUB for detail | | |  |  |  |
|  | | UQ as a major goal of the scientific evaluation |  |  |  |
|  | | Meaning of observed UQs |  |  |  |
|  | | Recommendations re data, models, improving prediction |  |  |  |

Updated 16.08.11