Table 1. Summary of Recommendations and Proposed Actions.

Recommendation	Action Item	Time Line
1. Involve stakeholders in future BOSC meetings.	Identify and invite key stakeholders to attend and participate in BOSC meetings. Further, these stakeholders will also be asked to review and comment on new implementation plan.	Early 2009
2. Hold discussions with risk assessment practitioners.	Discussions with NCEA and others are underway, and regular Communities of Practice are also an ongoing activity to help achieve this end.	Ongoing
3. Develop effective ways of dealing with wealth of data and interact with program offices on this issue.	Extensive suite of interactive databases is under development and prioritization of data input is in consultation with program offices and others.	Ongoing
4. Relevance of ToxCast™ beyond prioritization to risk assessment, including exposure paths, and ecology.	Expanded workgroups to address exposure pathways through ExpoCast. Partnering with NHEERL and NERL for HTS for ecological species other than human. Testing of pharmaceuticals in Phase II of ToxCast™ to compare results to known human toxicities.	2009 – 2012
5. Involve risk assessors and others in program offices for planning on eventual application of v-Liver to risk assessment.	Project team includes NCEA and will be expanded to include others. Consultations with program office to identify practical use cases that demonstrate utility of virtual tissues.	Begin in 2009
6. Detailed time table for milestones: ToxCast™, v-tissues, IT/IM.	Developed and put in place (See Appendix I for details).	Ongoing
7. Identify and prioritize key objectives for v-Liver with milestones.	Short-term goals: Identify environmental chemicals for proof of concept (PoC) in consultation with stakeholders; use of ToxCast™ data to begin quantitative parameterization of cellular and molecular responses – see Appendix I for detailed milestones. Long-term goals – use in RA with details being developed and to be presented at next BOSC review.	2009
8. Develop more detailed plan for v-Embryo with milestones.	Plan has been developed with long-term goal of a computational framework enabling predictive modeling of prenatal developmental toxicity; Please see Appendix I for milestones.	2009
9. Develop milestones for Arsenic BBDR.	Please see narrative for significant change in plans for this work	N/A

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10. Compile a list of specific use cases for specific questions that will be addressed with the database of ToxCast™ data.	A goal of Phase I of ToxCast™ is to find links between *in vitro* and *in vivo* toxicity as captured in ToxRefDB. To achieve this, the ToxMiner database is being organized into five main pieces – please see narrative for details.	2009
11. Exploration of alternatives to natural language processing (NLP).	Approaches for improving on previous uses of NLP are underway – greater dependence upon further testing and analyses for starting points derived through NLP.	Ongoing
12. Develop explicit milestones and research questions for addressing EPA's goals, and use this to focus first iterations of development of both the KB and model(s).	Questions and associated milestones have been developed: 1) Modeling of tissue level adverse effects to enable better extrapolation by formalizing the description of key events leading to adverse outcomes; 2) Extrapolating the tissue level effects across doses and time.	Ongoing
13. Delineate model specifications for sharing between models of different scales that can then be interconnected when appropriate.	International workshop in April 2009 will include multi-scale modeling experts to consider this issue and NCCT is collaborating with PBPK modelers to develop formal specifications to ease model integration.	Ongoing
14. Enlist appropriate supporters and collaborators to gain necessary data for developing v-embryo.	NCCT has worked with NCER to develop STAR funding opportunities that, through collaboration, can provide key data. In addition, collaborators in NHEERL have been identified and discussions have begun.	Ongoing
15. Continuous communication with program office personnel regarding Arsenic BBDR.	Please see memo regarding the suspension of this project. ORD's decision on this project was in consultation with program office and based on the program office's plans for this chemical and their reduced need for this modeling effort.	2008
16. ToxCast needs to define analytical outcomes to develop and validate analytical methods	The outcome of ToxCast will be a series of well-defined procedures that take as input the results of a set of in vitro assays run on a chemical and give a result which is a statement about the likelihood that the chemical will lead to a particular toxicity phenotype.	Ongoing
17. Limitations of natural language processing (NLP) for v-embryo and using alternatives.	The NCCT proposes using NLP as a starting point and then presenting the results to an analyst for manual quality control. NLP is used to extend, but not replace, the need for formal concept modeling (ontology) to organize relevant	Ongoing

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	information about developmental toxicities present in unstructured format in the literature.	
18. Integration of v-embryo program with other NCCT programs especially ToxCast™.	Work is being coordinated and integrated with the ToxCast™ project and the v-Liver and will be presented in the next computational toxicology implementation plan, manuscripts, and presentations.	Ongoing