PROJECT WORK PLAN

The development cycle for this five-year Project involves creation of the treatment document, script, and storyboard; mathematical modeling of the algorithms that underlie the smart objects; and beginning the development of the animated quest introductions and the Project Web site in Year I; developing the animated KSBs, objects for the instructor design interface, and avatars in Year II; building the online 3-D worlds, refining the instructor design interface, and developing teacher and student guides for virtual and physical modeling in Year III; classroom testing in Year IV; and national dissemination in Year V. The research program will begin in Year I and ramp up as the Project progresses. Materials will be developed throughout the academic year, during summer and weekend workshops, and through online collaboration as shown in the following table.

Year I 05/01/08-4/30/09	**Year II** 05/01/09-4/30/10	**Year III** 05/01/10-4/30/11	**Year IV** 05/01/11-4/30/12	**Year V** 05/01/12-4/30/13
Spring				
Begin UbD training with Grant Wiggins. Develop treatment document detailing how simulations and game engine interrelate. Identify "objects" that comprise simulations. Advisory board meets. Student focus group meets. Research and evaluation data collection begins.	Develop animated KSB simulations. Create mathematical models that define earthquake site objects. Begin instructor interface. Advisory board and teacher and student focus groups meet. Teams meet with Grant Wiggins.	Build online 3-D world. Create graphical assets. Complete instructor design interface. Develop student and teacher materials for lab-based physical modeling. Advisory board and teacher and student focus groups meet.	Development team teachers pilot test KSB simulations, game, and design-and-construct activities with classes. Advisory board and student focus group meet. Teams meet with Grant Wiggins to ensure fidelity to UbD model.	Meet with Grant Wiggins to review field test results. Make final changes to the simulations and game based on Wiggins' review and field test results. Research data analyzed. Advisory board and student focus group meet.
Summer (extended developers' workshops – one summer month during each of the first three years)				
Clarify treatment ideas. Develop storyboard and script. Identify variable interactions; develop math and physics algorithms that drive the simulations, program characters, and objects.	Continue KSB and mathematical model development. Focus groups validate the detailed specifications. Research and evaluation team interviews developers.	Continue development of simulations and physical modeling activities. Developers test functionality of 3-D simulations in an online environment. Grant Wiggins reviews materials in progress.	Revise materials based on pilot test data. Disseminate the beta game version to field test teachers / schools. Collect research data.	Disseminate completed final version to instructors and schools. Analyze research data. Continue to refine Project Web site.
Fall				
UB implements Project Web site and begins to develop introductory video. Identify content for inclusion in the KSBs. Advisory board meets. Teacher focus group meets.	Begin modification of characters (avatars). Hire programmers to support Bloomsburg team; obtain needed software programs. Advisory board meets to review materials.	Continue working on simulation architecture and design-and-construct functional modeling lab activities. Advisory board reviews and validates materials. Refine Project Web site.	Conduct field test training for ten teachers from across the country. Advisory board meets. Collect research data. Continue to refine Project Web site.	Conduct summative evaluation. Analyze research data relative to KSB simulations, the game, and lab activities. Advisory board meets.
Winter				
Use student focus groups to evaluate treatment and script and validate assumptions made by the team. Make changes as needed. Finalize KSB list.	Sequence the curriculum and the KSBs. Finalize development of Web site videos. Ensure Web integration of Bloomsburg, UB, and Hofstra components.	Refine graphical interface between the algorithms that run the simulation and what students see and use. Microtest materials in classrooms.	Conduct the field test. Evaluate the effectiveness of the KSB simulations, the game, and the physical lab activities. Make changes as required.	Widen dissemination efforts, including refinement of Web site explaining the game and how teachers gain access. Ready materials for publication.