



## The DISCUSS Colloquium and DIGSS 1.0

Project Outcomes Report

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The DISCUSS (NSF-ISE 0946691) project enabled the White Oak Institute to address a key problem facing the science museum field – the need for open-access specifications for digital technologies that can transform the capacities of museum giant screen (GS) theaters from analog to digital, as analog film becomes obsolete. DIGSS (the “Digital Immersive Giant Screen Specifications”) is an open-access, field-based set of specifications, modeled on the Digital Cinema Initiative (DCI) that converted commercial cinema from film to digital. DIGSS addresses the superior image, theater geometry and size needed for museum-quality immersive learning. Until DIGSS, there were no digital specs to address museums’ unique need for a truly immersive learning experience. As of April, 2012, DIGSS is officially transferred to the Giant Screen Cinema Association (GSCA), whose Technical Committee is taking over its stewardship. At least one system supplier now offers 3D and 2D giant screen digital projection systems designed specifically for DIGSS. The Peoria Riverfront Museum (opens October, 2012) will include the first new DIGSS-compliant digital GS Theater (3D flat, 70’ x 52’ screen).

The successful DIGSS initiative is the outcome of the Digital Immersive Screen Colloquium for Unified Standards and Specifications (DISCUSS), directed by the White Oak Institute with its team the GSCA, the Institute for Learning Innovation (ILI), the LF Examiner, and the MacGillivray Freeman Films Educational Foundation (MFF-EF). DISCUSS was supported by the National Science Foundation through a conference grant. John W. Jacobsen was the PI, and Jeanie Stahl the Co-PI, both with the White Oak Institute.

The DISCUSS Colloquium (June 14-16, 2010, Marblehead, MA) convened experts in digital technologies, theater geometry, network economics, learning evaluation and museum leadership to develop initial consensus, resulting in the first draft of DIGSS. The specifications were then refined by professional comment on the DISCUSS wiki. In September, 2011, the GSCA accepted the role of stewardship of DIGSS 1.0, with a goal of further developing the specifications, currently happening through screen tests and ongoing industry discussion.

The White Oak Institute partnered with key professional associations (GSCA, ASTC, IPS and IMERSA) to communicate DIGSS to their professional members, inviting field-wide input and review. DISCUSS collateral outcomes include: a bibliography of articles and publications related to giant screen theaters and films; a literature review of GS learning outcomes; a snapshot of the global GS theater network as of May 2010; an economic survey reporting on attendance, revenues, expenses and more; several scenarios calculating the network size needed to support the desired number of annual films; and a logic rationale that can serve as a research framework. These and other outcomes are integrated into the *DISCUSS Proceedings*, available with DIGSS 1.0 at [www.whiteoakinstitute.org](http://www.whiteoakinstitute.org).



The global network of analog GS theaters now has an open access digital specification for a museum-quality immersive learning experience equal to or better than their current systems. As a result, ISE museums have a hope the investments they made to build their GS theaters can transition to digital, and STEM GS filmmakers and educators have a bridge to the digital future. There is little doubt among GS professionals responding to ILI's evaluations that DIGSS is needed and that DIGSS 1.0 is a good start. There is concern about whether enough theaters will adopt DIGSS [rather than conventional DCI] to justify producing immersive films for museum-quality giant screens.

The potentials for planetariums, fulldomes and GS theaters to share digital content are now more widely understood among ILI's survey respondents, and some distributors are already formatting for both the GS and fulldome markets. The ISE media producers convened by the NSF (March 14, 2012) discussed multi-platform production and *transmedia* distribution; in this digital media realm, DIGSS will have to find its place among the Dome Master (fulldomes) and DCI (conventional movies) platforms.

We know people learn in GS classic film experiences and fulldome shows. However, we do not know enough about the unique or special STEM learning outcomes that might justify the costs of these immersive learning environments. DISCUSS and its participants' scholarly publications have collected knowledge about some of the special learning outcomes, and we have developed a research framework for learning more about how immersive theater works best as a STEM learning resource, and this new knowledge may have a broader impact.

DISCUSS also contributed a process for developing and adopting shared standards: A colloquium to reach consensus; a draft circulated among the professional community; involvement of the professional associations; transparent documentation of findings; and finally, stewardship by the appropriate professional association. This process model could be adapted to establishing other shared standards for broader impact.