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Title: Nuclear Weapons Theater Experience_V1

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Intended for: This white paper is a concept description for a new experience that will consist of video and multimedia in the Bradbury Science Museum's theater.

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Nuclear Weapons Theater Experience_V1

White Paper Concept

Overview

The theater experience is driven by the big message of nuclear deterrence through successful stockpile stewardship. This job enables other national and global security work with roots going back to the capabilities developed during the Manhattan Project and honed through the history of this successor scientific laboratory. The story that unfolds uses a narrative (traditional film-type approach), although the theater setup would offer immersion and decision-making (audience participation).

The idea is to demonstrate how and why the Laboratory continues its mission in maintaining the nation's stockpile while concurrently enabling the ever-evolving multi-disciplinary science and technology innovations developed for that purpose to take other scientists along vibrant paths.

Proposed story flow

The "film" consists of three components. Of the three, the first two components never change. It is the third component that viewers select via "vote." This third component makes the experience different every time. Moreover, the first two components are short enough that they are easy to sit through time and again. SME expert guidance will be necessary to ensure accurate and compelling storytelling.

- **Component 1:** *How we became* (2 minutes max). This component consists of a quick overview of how the Lab came to be. This is done visually and through a short aural piece "by" Norris Bradbury about the beginnings of a scientific laboratory.
- **Component 2:** *Who we are now* (2 minutes max). This component consists of a quick overview of what the Laboratory is doing now to enable nuclear deterrence and stockpile stewardship and the various one-of-a-kind facilities scientists and engineers use to conduct such work.
- **Component 3:** *A detailed peek* (7 minutes max). This component provides an exploration of a particular field of Lab expertise. The story is of the subject the audience has chosen by push-button vote at their seats at the end of component 2 and would be from among
 - fissile materials (including safeguarding and nonproliferation of these materials)
 - chemical high explosives
 - computing (including cyber security and space situational awareness)
 - imaging and sensing (including treaty verification)
 - materials
 - human health physics studies

For example, if fissile materials is chosen, some of the action will show a nuclear chain reaction in a weapon as leveraged during the Manhattan Project, transitioning to how a nuclear reaction creates nuclear energy and how it relates to our work on the kilopower space reactor technology and the work we do on RTGs for space exploration. The story and film close with a reference back to this expertise and its continued use today in the weapons program.

At the end, audiences would know there are five other areas of expertise that hadn't been explored through this seating and would be motivated to "do it again" to see and learn about a different one.

The main medium of presentation is moving images, but the use of dynamic sound, special lighting effects, objects that appear out of nowhere (i.e. are behind scrims and are illuminated at appropriate times in the action) and so on give this presentation 4D and repeatability appeal.