WHAT DOES THE PUBLIC NEED TO KNOW? THE NATURE OF SCIENCE AND FUNCTIONING PUBLIC SCIENTIFIC LITERACY. M. Storksdieck[1], [1]Board on Science Education, National Academy of Sciences, 500 5th Street, NW, Washington, D.C., 20001, Mstorksdieck@nas.edu.

Introduction: The headlines often bemoan how poorly U.S. students are doing in science, technology, engineering, and math. Surveys of the public suggest they are moderately interested in science, and yet they demonstrate a lack of understanding of "basic" science concepts and how science works. It is critical to the future of the nation – and the world – to have a population that is scientifically literate, whether they are citizens who need to make informed decisions for themselves and their community, professionals who draw from scientific disciplines to contribute to society, or scientists who advance our understanding of the world around us. While there is general agreement on the need for improved science literacy, there is far less agreement on what scientific literacy can or should be and how it is best measured.

What is "basic" scientific knowledge that all citizens should understand? Scientists and science educators often focus on science content, but having the facts without the foundation of understanding might not serve well if the end game is to achieve a public that is scientifically aware, engaged, and literate. The National Research Council is a lead partner in the development of the soon-to-be-released Next Generation Science Standards [1]. The standards identify the scientific content and skills in which students should demonstrate proficiency. These new standards reflect our evolving understanding of how students learn science. They can serve as a guideline for the content that students should know. But they also underscore something that is, perhaps, more important. *They focus on the practice of science.* And they can help push changes to how science is done in the classroom as well as beyond the classroom. The standards are designed to have students actively engage in scientific practices. They can learn the broader story of science – and build on it - by creating a foundational understanding of how science is done the way scientists do it.

This presentation will explore why it is important for the public to understand the nature and process of science in today's society, the research behind this idea, and how scientists and science educators can play a role. From citizen science projects to visualizations to games, participation in science engenders sustained excitement and learning.

References: [1] Next Generation Science Standards, http://www.nextgenscience.org/.