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Making Stuff
**Summative Evaluation
Executive Summary**

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SUBMITTED TO

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EXECUTIVE SUMMARY

WGBH and the Materials Research Society (MRS) collaborated to create *Making Stuff*, a multi-faceted project about the all-encompassing role that materials play in shaping our lives. The project included a four-episode NOVA mini-series originally broadcast in January, 2011 that was hosted by *NY Times* columnist David Pogue, a large-scale national outreach campaign with collaborating partnerships funded in 20 locations, web pages on the NOVA website, and an online contest promoted and hosted on Facebook.

Across all project components, the overarching goals were to enhance the general public's engagement with materials science and appreciation of its effects on society, and to enhance collaborations among professional audiences (e.g., educators, scientists, community-based organizations) such that together they would reach a broader audience of adults, youth, and underserved populations than they could individually.

Goodman Research Group's (GRG) summative evaluation has focused on the process and outcomes of all of the project components, assessing the extent to which the various *Making Stuff* resources (e.g., television series, website, national outreach collaborations and community events) achieved their intended impacts on public and professional audiences. The multi-method evaluation study included recruiting different groups to use particular *Making Stuff* resources, along with surveying others after they used a particular resource on their own. In all, evaluation data were collected from the following:

- 120 viewing study participants completed online pre- and post-surveys and brief forms after watching each *Making Stuff* episode on TV.
- 87 NOVA website visitors completed an online survey after reviewing the *Making Stuff* pages on the site.
- 563 "What's This Stuff? Ask David Pogue" Facebook contest participants completed an online survey during the contest and 423 of them completed a one-month follow-up survey.
- 840 community outreach attendees completed paper survey feedback forms distributed at the events they attended.
- GRG conducted on-site observations at nine of the national community outreach events.
- 22 national outreach partners from 21 sites completed an online survey about the outreach and partnership collaboration experience.

Across all project components, evaluation participants reflected a relatively even mix of gender and a range of ages. Most participants were White and over half completed at least a Bachelor's degree. Relative to the majority of evaluation participants, Facebook contest survey respondents included slightly more men, and outreach event attendees included respondents who were younger and a slightly higher proportion of non-White participants.

This document summarizes key findings and recommendations from the summative evaluation. The full report includes methods, results, conclusions and recommendations, and appendices.

KEY FINDINGS

The *Making Stuff* project components successfully engaged a variety of members of the general public in materials science and increased their awareness and understanding of the content.

- Viewing study participants, who were occasional NOVA viewers before the study, engaged with *Making Stuff* resources by watching NOVA and NOVA scienceNOW on TV and visiting the NOVA website more frequently than they did before the study.
- Website visitors, who were already frequent NOVA viewers, engaged with *Making Stuff* by joining NOVA's Facebook page, using the interactive features on the *Making Stuff* web pages, and viewing the mini-series on TV.
- Facebook contest participants, also frequent NOVA viewers, engaged with *Making Stuff* by visiting the relevant pages on the NOVA website and watching the mini-series on TV.
- National partners were members of PBS stations and formal and informal learning institutions, and they engaged the public with *Making Stuff* by hosting community events for individuals, families, and educators. Family events in science museums, science cafés, and educator workshops were the most common event types.
- Community event attendees were families and school groups who were not necessarily aware of *Making Stuff* prior to attending. They engaged with *Making Stuff* resources through hands-on activities and interactive presentations and demonstrations that motivated them to seek out more information online and on TV.

***Making Stuff* resources motivated users to seek out more information and stay up-to-date about materials science content.**

After engaging with *Making Stuff* resources, participants discussed topics from each episode with friends and family, and sought out ways to stay up-to-date in the field. They read science articles in print and online, and watched additional programs on TV about science and current research.

***Making Stuff* resources were both informative and appealing to users.**

- Viewers of the full mini-series saw information that was new to them in each episode and they reported increased understanding of materials science content after viewing. They found the program overall to be interesting and engaging and they felt that host David Pogue contributed to their interest in the series. Already strong appreciation for the many aspects of their lives touched by current science research was sustained after viewing the full mini-series.

- Website visitors found the *Making Stuff* web resources, across all of the new NOVA web feature formats, to be quite informative and appealing. Facebook contest participants found the contest engaging and they appreciated the challenge of decoding clues for each material.
- Community outreach events were well-equipped with resources that engaged attendees and helped them learn about materials science and how it affects our daily lives. Collaborating partners reported that demonstrations, hands-on activities, and presenters were the key to helping attendees feel engaged in materials science. Attendees of community events reported they enjoyed the experience and learned about materials science.

National partners felt supported by WGBH staff and the resources as they planned and implemented their outreach events.

The outreach campaign overall met or exceeded collaborating partners' expectations. Partners found the support from WGBH was more helpful for planning events while the *Making Stuff* resources and materials were more useful when conducting their events.

Partners perceived their collaboration experiences positively and intended to maintain many of the partnerships.

Across the collaborating organizations, from 4 to 13 in each funded site, partners felt the roles and responsibilities for each organization were clearly defined, partners had a shared vision of the outreach events, and there was clear communication between the organizations. These are three elements known to be quite valuable to the success of partnerships among organizations in a community.

KEY RECOMMENDATIONS

In consideration of the summative evaluation findings and conclusions we have drawn from those findings, GRG makes the following recommendations for future similar projects and initiatives.

WGBH and MRS should take advantage of all the resources created for this project and capitalize on the different entry points that now exist.

Because different user groups will start with the resource that is most interesting and accessible to them, project developers will want to ensure there is enough content to keep users engaged as well as to inform them of all the other resources. With the goal of pulling in users (e.g., TV viewers, website visitors, event attendees) and then keeping them involved, developers should focus on making the content easily navigable and sustaining users' interest over time.

Based on the current project, we present the following examples of ways to attract users beyond the regular audience.

- Use of social media for active engagement, similar to the Facebook contest, will increase the range of potential users. A contest or game that specifically encourages participants to enlist the help of others will serve to expand further the project reach.
- A known personality may attract new audience members for a particular program and create cross-over. In this case, *NY Times* readers who followed David Pogue, but were not regular NOVA viewers, were encouraged to watch NOVA and NOVA scienceNOW.
- Hosting and promoting the program resources at a variety of different institutions, including formal and informal learning organizations, will increase the range of community members likely to participate. Community events then provide a good opportunity to raise awareness of other resources and to encourage attendees to share the information with others.

Going forward, an online contest should reflect some modifications to the current model, based on user feedback to increase use and satisfaction.

The organizational structure should parallel the medium on which it is housed. For example, for the “What’s this Stuff?” Facebook contest, users clicked on and “Liked” different pages for each material. However, care should be taken to avoid making the game too cumbersome to the point that users may opt out. Additionally, use of social networking media should reflect current trends, so as to ensure the largest potential user base.

If producers have a goal of significantly changing attitudes, then popular misconceptions should be identified and addressed in a very concrete manner and the project as intervention should be expanded.

Similar to the *Mythbuster* format, producers can state a common misconception about a topic and then walk users through the process of understanding the reality of that content.

Another approach to modifying attitudes would be to create a larger and longer-term intervention. Producers can create opportunities for a large-scale community event that would engage a wider range of the public. Promote and hold a community experience where residents are encouraged to watch a program in their homes, with friends, or at few centralized locations in the community (i.e., common point of entry). Hold discussions leading up to and following the viewing. Implement family activities such as festivals that continue the interactions and learning over time.

Because of the redesign of the NOVA website overall, producers should put deliberate thought and planning into ongoing promotion of the web resources.

Regular visitors may see changes to the NOVA site, but not realize the reasons WGBH has made deliberate changes. The web team should consider adding to the site information about the new features along with descriptions of the purpose

of each. Website visitors should be encouraged to explore the new features on the site as well as all of the other *Making Stuff* resources.

Logistical changes to the national outreach campaign process and procedures would likely enhance everyone’s experience, from partners to event staff and volunteers to event attendees.

Outreach developers should create a clear planning guide, using an interactive online platform, on which prospective partners can see an outline of expectations for participation and on which they can describe in detail their own plans for community events if they are selected for funding. The same platform can be used to list all requirements including tasks, timing, and deliverables throughout the duration of the outreach campaign. Partners and campaign organizers can use the platform to provide consistent contact information for all participants, dates, titles, and descriptions of all events planned and completed, and to describe any changes or modifications throughout the process. Partners’ use of a consistent form and format will likely increase the cohesion of the campaign nationally and decrease the likelihood of gaps in communication that may lead to delays or confusion.

Informational materials about all available *Making Stuff* resources should be posted by each collaborating organization and included at community events to attract a broad range of participants within and across communities.

Making Stuff outreach events attracted families with young children as well as school groups, educators, and scientists. Participants across a range of background experiences and science knowledge were engaged, learned new information, and had fun in the process. Provided with their own one-pagers, fact sheets, and *Making Stuff* promotional items, community members can bring in other users through their own word-of-mouth promotion.

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