

# Best Practices for Science Communication: Messaging and Reputation

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## POLICY BRIEF

### Issue

Communication between scientists and policymakers is critical for developing effective policies grounded in scientific evidence. However, actual communication between these two groups is often difficult, due to differences in training, communication styles, and motivation. While numerous “best practices” guides provide advice on science communication, many of these recommendations are based on personal experience rather than empirical data.

To remedy this gap in the literature, researchers at the University of California, Davis conducted a literature review of scholarship on best practices in science communication, with an emphasis on finding reports based on empirical data rather than personal experience. The researchers synthesized their findings into a set of best practices for science communication (Figure 1) and considered how scientific reputation affects engagement in the policy process.

#### 1. Clear, effective communication

- a. Pick an appropriate venue or medium
- b. Use simple language and minimize jargon
- c. Minimize, but do not avoid, uncertainty

#### 2. Audience-focused messaging

- a. Know your intended audience’s background and expectations
- b. Frame your message so your audience can relate

#### 3. Outcome-awareness

- a. Identify and focus on desired goals
- b. Sustain engagement over time, with a diverse set of policy makers
- c. Make recommendations specific and actionable

### Key Research Findings

**Clear, effective communication increases the likelihood that scientific information will inform decisions.** Researchers should pick an appropriate venue or medium for conveying their research, use simple, jargon-free language, and focus on core messages. Uncertainty should be put in proper context and communicated to audiences when it will have a meaningful impact on decisions they might make. However, non-expert audiences will generally want to focus on the things that are certain rather than uncertain.

**Messaging should be tailored to specific audiences.** Researchers need to know their intended audience’s background and expectations. Messaging should be framed such that the intended audience can relate to it. This means researchers may need to develop multiple ways of communicating the results of a given study, each tailored to a specific audience.

*Figure 1. Guidelines for effective communication with policy makers, synthesized from the literature reviewed in the UC Davis study.*

**Researchers must identify and focus on their desired goals in communicating with policymakers.**

Common motivations might include informing policy development, influencing behavior, or identifying an emerging issue. Information that is not directly related to the core message should be de-emphasized or omitted, while scientific integrity should be maintained. Recommendations should be specific and actionable. For example, if researchers are discussing pending legislation, their message should focus on elements that are directly relevant to the legislation’s focus, rather than generalities on the topic.

**Sustained engagement is critical.** Policymaking processes advance along defined schedules, and the receptiveness of staff or elected officials to scientific input may vary over time. Establishing working relationships with policymakers can help scientists engage early and often in policymaking processes to maximize their impact.

**Scientific reputation influences the success of communication with policymakers, but little research has directly addressed this dynamic.**

Studies consistently cited policymakers’ perceptions of researchers’ reputations as highly influential on the effectiveness of science communication. However, none of the literature reviewed attempted to quantify this effect. No research was found that directly examined a relevant inverse effect, whereby some scientists might avoid policy engagement due to concerns that their involvement could damage their reputation. However, this was anecdotally observed in some studies.

**More data-driven research should be done on effective science communication.**

The researchers found relatively few studies of science communications based on data rather than personal experience and anecdotes. This is, in part, due to the extreme difficulty in conducting rigorous quantitative research on policy systems. It is virtually impossible to isolate variables from the many confounding factors or to have randomized repetitions to establish statistical

significance. Still, the vast amount of policy systems in the world, combined with new methods in systematic qualitative research, should offer the possibility of future research in this area.

## Policy Implications

The ability of science to inform effective policy is often constrained by communication challenges between scientists and policymakers. Improving scientists’ capacity to effectively communicate through training can be part of the solution, however, additional measures may be helpful.

Policy makers can play a role in creating venues and opportunities for scientific communication through establishing and empowering science-focused bodies to play an active role in governance. Adjusting the criteria by which scientists are evaluated and compensated can provide more incentive for scientists to engage in this type of work.

Additionally, policy makers can support research that uses scientific methods to better understand the factors affecting science-policy interactions. This type of research could help address the relative scarcity of empirically focused analyses on this topic.

## More Information

This research brief is drawn from “Improving the Transfer of Knowledge from Scientists to Policy Makers: Best Practices and new Opportunities to Engage,” a white paper from the National Center for Sustainable Transportation, authored by Colin Murphy, Paige Pellaton, and Sam Fuller of the Policy Institute for Energy, Environment, and the Economy at the University of California, Davis. The full paper can be found on the NCST website at <https://ncst.ucdavis.edu/project/improving-transfer-knowledge-universities-policy-makers-best-practices-and-new>.

For more information about the findings presented in this brief, contact Colin Murphy at [cwmurphy@ucdavis.edu](mailto:cwmurphy@ucdavis.edu).

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