

# Great public engagement with science is

# Strategic

Advancing Public Engagement Across LTERs



## Great public engagement with science is:

- **Strategic** - guided by clearly articulated, audience-specific goals and objectives
- **Cumulative** - supports ongoing, positive encounters between scientists and publics via multiple pathways
- **Reciprocal** - grounded in two-way exchange and mutual meaning-making
- **Reflexive** - operates in iterative loops of reflection and adaptation
- **Equitable** - recognizes systemic injustices in science and society, acknowledges biases, and is intentionally inclusive
- **Evidence-based** - builds from knowledge about how people learn about and use science

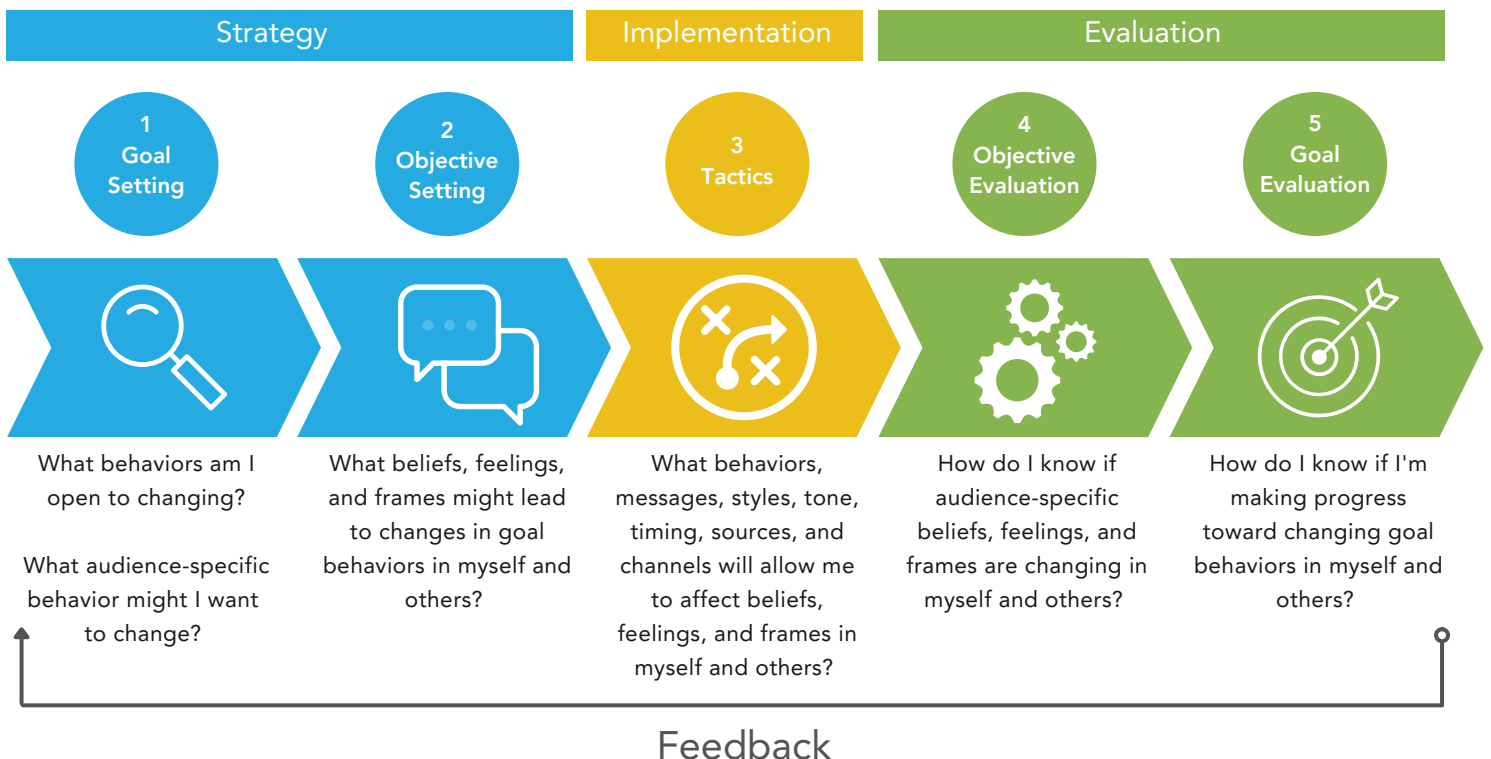
## What does it mean to be strategic?

Effective public engagement with science (PES) doesn't happen by accident. The strategic communicator is guided by clearly articulated, audience-specific behavioral **goals** and cognitive and affective **objectives** (i.e., desired beliefs and feelings). They then implement communication **tactics** intentionally to achieve their goals and objectives.

Some may balk at the idea of PES being so calculated. However, we know that scientists have goals and pretending that they do not is not helpful. Instead, efforts should focus on developing strategic engagement plans in collaboration with community members and with attention to selecting goals, objectives, and tactics that are ethical.

## Goal setting

Goals are the longer-term changes that PES is intended to generate. Goals often involve increasing the likelihood that people *do* a behavior (e.g., get vaccinated) or *don't do* a behavior (e.g., not oppose a new technology). Almost all PES goals also involve behavioral trust (i.e., asking people to make themselves vulnerable to expert advice). Scientists should also set goals to reshape their own behaviors (e.g., considering feedback for a research project).



## Case Study: Strategic PES in Action

By Liz Schultheis, Education & Outreach Coordinator,  
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Research at the Kellogg Biological Station Long Term Ecological Research Program (KBS LTER) aims to improve farmers' ability to increase biodiversity and ecosystem services while maintaining farm profitability. In 2019, researchers added a new treatment—prairie strips—to experiments that had been running for 30 years. KBS chose to focus on prairie strips with a research goal of better understanding how to increase biodiversity as well as PES goals of (1) forming new partnerships with farmers and other conservation actors and (2) identifying novel research opportunities through these collaborations.

The KBS LTER developed the MiSTRIPS Program to focus on increasing the adoption of prairie strips in MI, while providing opportunities to build a community of innovative farmers and partner organizations who are helping KBS scientists identify novel research in regenerative agriculture. Prairie strips have enabled new biodiversity research at the KBS LTER, as well as increased farmer-researcher interaction by providing an engaging focus for field days, on-farm demonstrations, and learning circles. Measures of success include new partnerships with groups such as MSU Extension, USDA, and The Nature Conservancy; new and stronger relationships between scientists and farmers; and new research projects that have been designed based on farmers' needs and interests.

Metrics of success include new prairie strips planted, as well as on-farm research conducted as a collaboration between KBS scientists and farmers. Interviews are being used to assess farmers' views about these relationships, prairie strip adoption, and KBS scientists' research into soil health, pollination, and other ecosystem services. KBS is also collecting feedback from scientists and tracking new research ideas, grants received, and publications developed to determine the impact of PES on research.

### Objective setting

Communicators shouldn't expect PES to change behaviors directly. It is more reasonable to expect that they can affect what people believe (i.e., perceive) and feel, as well as how they frame things. These cognitive and affective outcomes are called "objectives" to differentiate them from the ultimate behavioral goals that are expected to result from changes in objectives. Take the goal of broadening participation of local communities in LTER careers, for example. Possible objectives for this goal might include helping students from a local community college believe that relevant LTER careers could be satisfying and achievable. The task of setting objectives starts with a goal that includes a specific *who* and a specific *what*. Logic and evidence-based theories can then help identify potential beliefs, feelings, and frames that might allow communicators to reach their goals.

### Selecting tactics

Only after going through the thoughtful process of setting goals and objectives does the strategic communicator choose their communication tactics. How will they behave? Who will speak? What will they say? What tone will they use? Tactics should be chosen because communicators have reason to believe they will help them achieve their objectives. For example, if their objective is to help students believe that LTER careers could be satisfying and enjoyable, scientists might share the different benefits of their jobs.

### Evaluation planning

When asked about evaluation, many jump to outcomes—did they achieve their desired goals and objectives? Indeed these are important questions that evaluation can help answer. It is equally important to track the tactics chosen and used and how they were used; these data tell the stories of the intentional design decisions made to create and implement a program that was designed to achieve success.

### Learn More

The summary shared here was informed by these publications. The figure on the first page has been recreated, with permission, from the first reference shared below. Thanks to John and Anthony!

Besley, J. C., & Dudo, A. (2022). *Strategic Science Communication: A Guide to Setting the Right Objectives for More Effective Public Engagement*. JHU Press. [\(to learn more about identifying, goals, objectives, and tactics\)](#)

Besley, J. C., Dudo, A., & Yuan, S. (2018). Scientists' views about communication objectives. *Public Understanding of Science*, 27(6), 708-730. [\(to learn more about the "strategic science communication as planned behavior" model and communication objectives underlying trust\)](#)

Hon, L. C. (1998). Demonstrating effectiveness in public relations: Goals, objectives, and evaluation. *Journal of Public Relations Research*, 10(2), 103-135. [\(for more background on the importance of communication that is guided by objectives and goals\)](#)

Jensen, E. A., & Gerber, A. (2020). Evidence-based science communication. *Frontiers in Communication*, 4(78). [\(to learn more about issues facing the science communication field and a path forward toward evidence-based approaches\)](#)