

# NNOCCI's Impacts After 5 Years

Community of Practice and the Strategic Framing approach are helping educators activate public conversations about climate change solutions.

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Climate change is an emotional and political issue in the United States. Across the world, we face environmental challenges at an unprecedented magnitude. Although scientists have reached global consensus about climate change, the public struggles to understand this issue and its solutions. The message can be dreary or even terrifying. How can we help the public navigate climate change in a productive way?

Informal science educators and scientists are stepping up to the challenge with the National Network for Ocean and Climate Change Interpretation (NNOCCI). NNOCCI is a group of passionate environmental educators and scientists who share the goal of raising the bar on conversation surrounding climate change. They are working to help people who visit their parks, museums, aquariums, nature preserves, zoos, and other science institutions share a new story of hope. NNOCCI helps these organizations develop messaging and programs based on the shared premise that people are innovative, clever, and capable of solving seemingly insurmountable problems when they believe in themselves. Together, we can be part of climate change solutions.

***NNOCCI's approach...is powerful. It can help all of us to advance the broader goal of public engagement in learning and thinking about climate and ocean changes.***

- Aaron Pope, California Academy of Sciences

NNOCCI is a collaborative effort led by the New England Aquarium in partnership with the Association of Zoos and Aquariums, FrameWorks Institute, Woods Hole Oceanographic Institution, National Aquarium in Baltimore, Monterey Bay Aquarium, Ohio's Center of Science and Industry (COSI), and our organizations, NewKnowledge and Pennsylvania State University. NNOCCI is funded by an award from the National Science Foundation.

NNOCCI's seven-year project is helping people who work in informal science education to better communicate about climate change and its impact on our lives. After two years of planning and three years of implementation, we are starting to learn about the impacts of this work.

The results of our evaluations so far show NNOCCI is having a positive impact. NNOCCI equips educators and scientists with four essential tools to bring their message to the public: knowledge about climate change science, effective communication techniques, a supportive community of NNOCCI members, and confidence to do this difficult work. NNOCCI members' improved messaging contributes to better understanding of climate change among people they talk to. In turn, these people are more likely to take action to solve climate change. These exciting findings demonstrate the positive influence NNOCCI already has, with the possibility to bring the message of climate change solutions and hope to more people across the US.

### Strategic Framing: Putting Climate Change in Context

A central feature of NNOCCI is the Study Circle, a learning group of educators and scientists who take part in a six-month, cross-disciplinary training program. The Study Circle intensively learns how to engage audiences through Strategic Frame Analysis® (i.e. effective messaging), a research-based approach to communications. This approach helps communicators understand the public's views and engage audiences in thinking productively about how they can participate in climate change solutions. Upon completing the Study Circle, members join the larger network of NNOCCI colleagues and continue to experiment, evaluate, and share successes from their work with each other.

To date, 233 NNOCCI members have completed the Study Circle training, representing 33 states and 139 unique institutions.

### Study Circles

The study shows that the Study Circles have direct positive influence on NNOCCI members' attitudes, behavior, emotions, and knowledge relating to climate change science and climate change communication. Study Circles substantially improve members' feelings and perceptions about climate change communication. They are more knowledgeable about climate change, believe they are more capable of talking about climate change, are less concerned about negative responses from their audiences, and feel more hope and energy about climate change communications. These changes persisted over time, from when NNOCCI members completed the training to six months later.

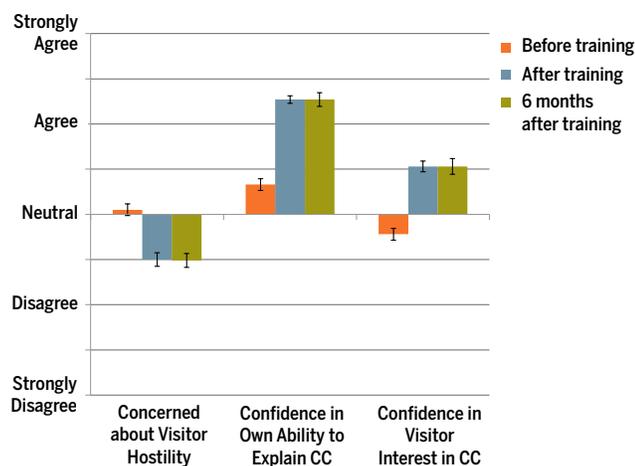


Figure 1. Changes in concern and confidence over time.

Consistent with this change in attitudes, members also became more likely to change their actions. They were more likely to use the Strategic Framing approach to support friends and coworkers' conversations about climate change. The support they give to their colleagues and friends can be emotional and informational help, such as providing resources. They also talked more frequently to a variety of people about climate change as a result of their NNOCCI training. Their talks or presentations with other organizations slightly increase too.

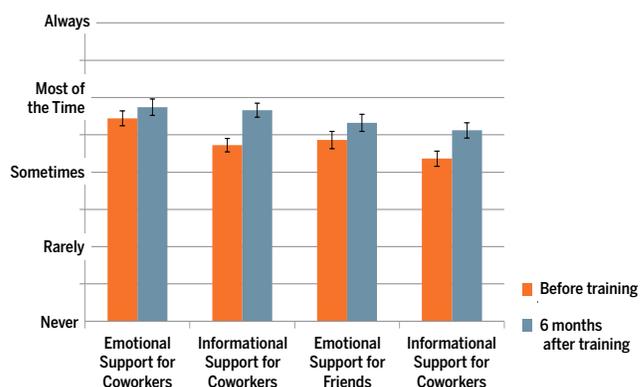


Figure 2. Change in support of others in relation to climate change.

Educators and scientists are less likely to suppress their conversations about climate change after training, though they still do not say as much as they want to say. Despite not saying all they want to, they talk about climate change more frequently and with more people after they finish their training.

In the future, we plan to explore specific discussion topics, such as the effectiveness of training in sub-groups over time and whether feelings can account for changes in actions.

### Impacts on Social Networks

NNOCCI members' conversations about climate change appear to positively influence members of their social networks, like their coworkers, family, and friends. Because of their conversations with NNOCCI members, these social contacts said they improved their understanding of climate change, had more hope about working with others to address climate change, and were more likely to take action to solve climate change. They also believed that NNOCCI members' communication improved when they used Strategic Framing.

Researchers tested social contacts' observations of the ways NNOCCI members' talked about climate change to see how they influenced their friends, family, and coworkers. NNOCCI communicators' improved use of Strategic Framing techniques in talking about climate change is strongly associated with improvement in how well their social contacts understood climate change. There is a similar, though weaker connection between these communication techniques and social contacts' greater hope about working with others to address climate change. This bigger impact on understanding may be because climate change conversations are seen as more explanatory or learning exchanges, and less as conversations about hopefulness or emotions.

***NNOCCI is showing that understanding climate change is important for encouraging climate change action.***

When these social contacts had an improved understanding about climate change or hope that they could work with others, they were also more likely to take action. It seems that greater understanding of climate change was more strongly associated with action than hope.

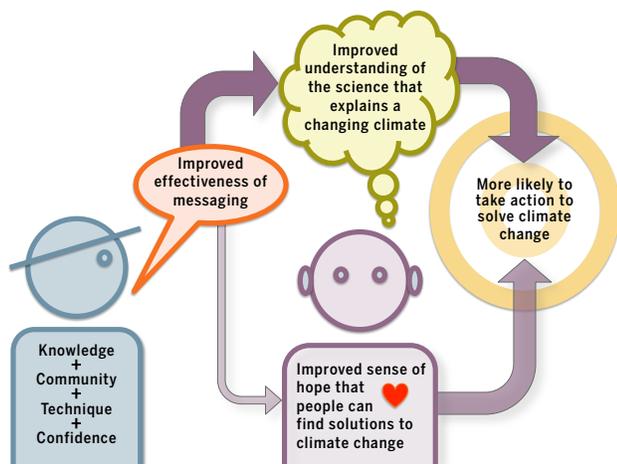


Figure 3. Connections between messaging, understanding, hope, and action.

Strategic Framing seems to be a powerful tool that educators and scientists use to help their social networks become more climate science literate. In turn, NNOCCI is producing a more engaged public.

### Improving Visitor Learning & Action

A central goal for NNOCCI members is to build climate change programming, outreach, and exhibits at their own institutions. In turn, visitors may more frequently encounter high-quality, accurate interpretation that help them understand climate change science, have more positive attitudes toward this work, and be more willing to take action in climate change solutions.

A preliminary study at institutions before and after they participated in Study Circles shows that audiences of presentations based on the NNOCCI approach are noticing more climate change programming. As a result of these new programs, visitors believed they gained more knowledge about climate change. They were able to relate more to communicators, were more willing to learn about solutions and take action in those solutions. Ultimately, these visitors had more positive feelings about what they can do about climate change after the institutions used the NNOCCI approach.

While these outcomes are promising, there has not yet been wide participation in the study of impacts on visitors. The NNOCCI team looks forward to the next two years of the project as more NNOCCI members develop new programming on climate change science and solutions and send their data to us for analysis.

### A Community of NNOCCI Practitioners

Another important goal for NNOCCI is to establish a resilient and sustainable Community of Practice: a network of educators and scientists that continue to refine best practices, spearhead new communication opportunities, and support other members in this work. This community is seen as essential to magnifying NNOCCI's long-term impact on the way organizations and people across the US talk about and take action on climate change.

As the community continues to grow, members connect with each other in many ways, including webinars for the entire network, conference calls with regional sub-groups of members, gatherings at conferences, and collaborations among member organizations, among others. The network will continue to absorb more members as more educators and scientists train in the NNOCCI approach.

Many NNOCCI educators and scientists appear to be pushing the envelope with Strategic Framing in their own institutions and are helping one another to continue to experiment. These emerging leaders are motivated to thoughtfully engage and share their work within the network. The more collaborative and self-directed all members become in their climate change communications, the more successful the NNOCCI Community of Practice will become.

Other members of the NNOCCI community are at varying stages of embracing and implementing the new approach at their institutions. While these members intend to make changes, their presentations, exhibition programs, and media communications show they are not yet fully using NNOCCI tools and language.

Some members have encountered challenges to new program implementation, including state government mandates about language relating to climate change and a need for internal support for programming. Although these cases are rare, they indicate the perception of substantial obstacles for parts of the network. There are signs of motivation to try innovative approaches to overcome these problems, but many of these organizations are not yet fully implementing the NNOCCI approach in their work.

## The Next Two Years

The emotional work associated with being an informal science educator or scientist who understands the scale of the climate change crisis remains challenging for many people. But NNOCCI has shown that the time is ripe for new ways of tackling the challenge as a community. The NNOCCI community is showing that there is a passionate and innovative group of people ready to step forward to help others know the problem and to motivate their communities to action. With two years to go on this effort, the NNOCCI team has made substantial progress towards its goals. As NNOCCI embarks on the last two years of this initiative, it is more important than ever to activate science communicators across the US. The data to date suggest that if people work together, it is possible to change the national discourse around climate change so our society can be more productive, creative, and solutions-driven.

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