



Activities and Conversations about Synthetic Biology

The aim of this project is to foster activities in science museums through which **public audiences can engage with scientists and engineers** in conversations about what synthetic biology is, how research is carried out, and the potential products, outcomes, and implications for society of this work. Researchers and publics **will explore personal and societal values and priorities** as well as research outcomes so that **both groups can learn from each other**.

Public Engagement with Science

PES...(is) characterized by mutual learning—not one-way transmission from experts to publics... (Many Experts, Many Audiences. CAISE, 2009).

Project Partners



Insights and Challenges

- Developing a shared content map helped bridge different conventions and expectations among types of institutions
- Synthetic biology is complex and fast-evolving
- Audiences vary across institutions
- Fostering deeper conversations in the museum setting requires more planning

Target Audiences

1. Synthetic biology researchers
2. Informal science educators
3. Public audiences



Multi-Site Public Engagement with Science – Synthetic Biology

The Building with Biology Project

Engaging scientists and publics in conversations and mutual learning at 200 sites nationwide

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Project Goals

1. ISE professionals and scientists will have greater understanding of:
 - impacts of PES on scientists and publics and of how best to engage participants,
 - techniques of PES and how to use them sustainably and inclusively with issues relevant today,
 - how to evaluate PES activities with goals different from public understanding goals; and an increased feeling that they are able to conduct or participate in PES activities.
2. ISE professionals will have increased:
 - knowledge of synthetic biology, societal implications it raises, and strategies for engaging publics in learning about both;
 - ability to design, present, facilitate, and evaluate PES activities; and to organize PES events that attract participation of scientists and a diverse publics.
3. Scientists will have increased ability in public communication and dialogue skills

Project Description



Scientists and educators co-developed activities



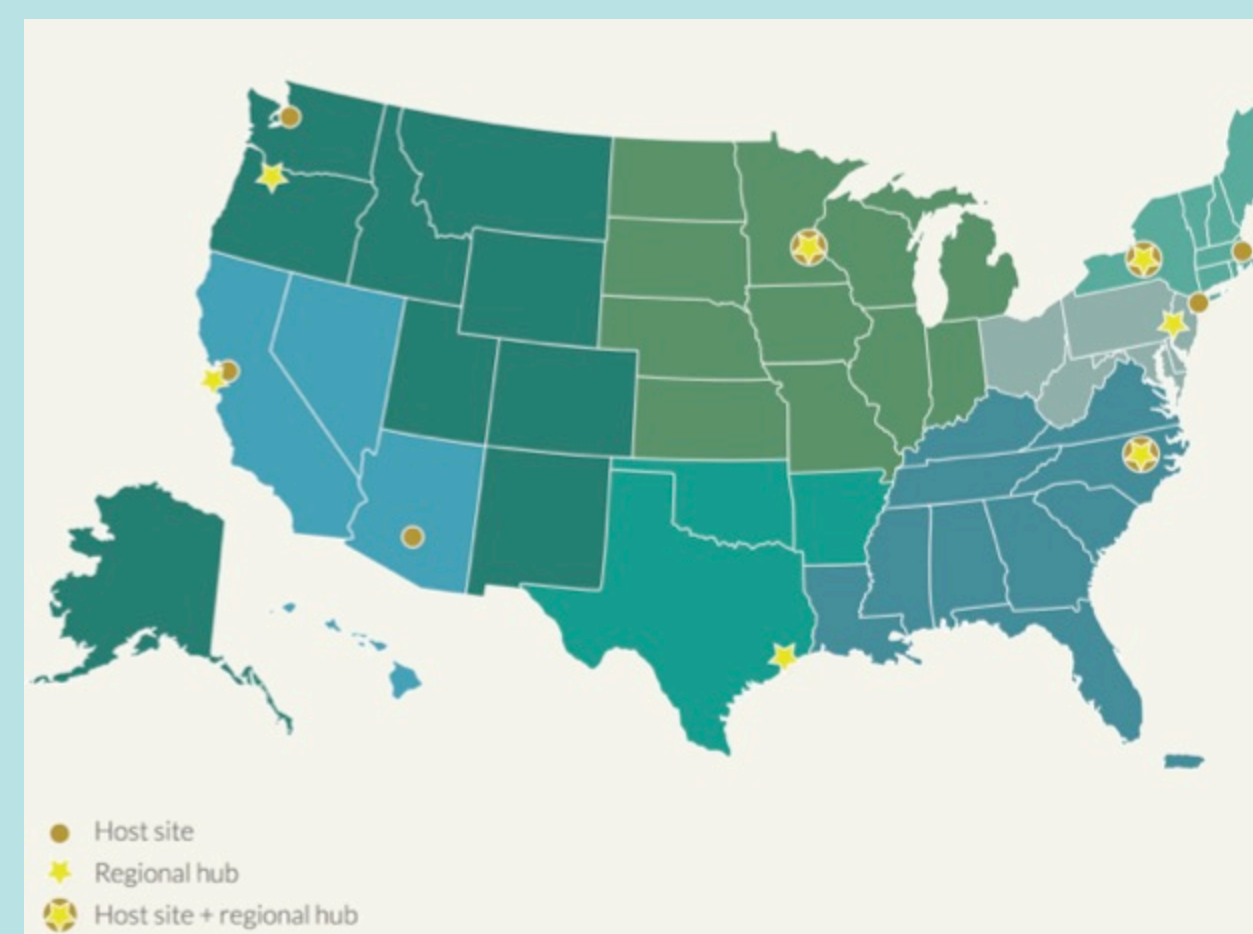
Prototypes went through the Team-Based Inquiry (TBI) process



Activities went through peer review with scientist partners



Sites recruited and trained scientist volunteers pilot events



Pilot events at 8 sites in 2015 and evaluation data collected



Activities revised based on pilot data and scientist review



Kits with revised activities will be distributed to 200 US sites.



Sites will hold engagement events nationwide in summer 2016



Summative evaluation and a Guide for PES by February 2017

Project Evaluation

Evaluation has been integrated throughout the project to inform the work and understand its impact on developers, event hosts, scientist volunteers, and visitors.

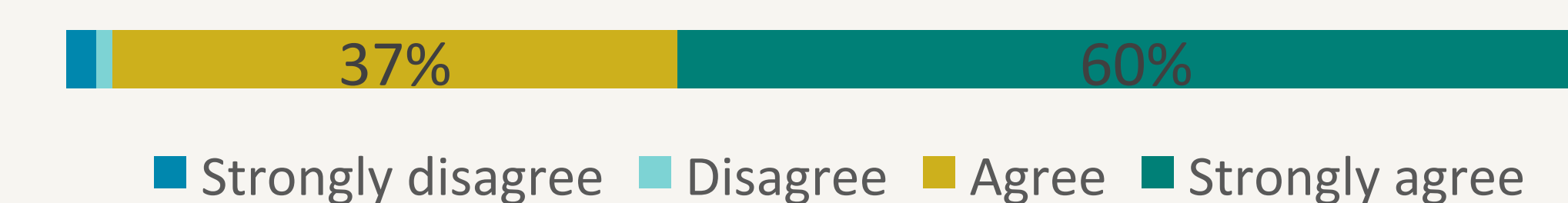
Front-end, formative, and impact evaluations, led by an internal team, aims to generate knowledge to increase the capacity of the field to create, evaluate, and implement PES activities. Summative evaluation, led by external evaluator Rockman et al., aims to understand whether the project increases the capacity of scientists and ISE professionals to create and implement PES.

Formative Evaluation Findings

The following findings are based on surveys collected from volunteers and members of the public at Building with Biology pilot events in 2015.

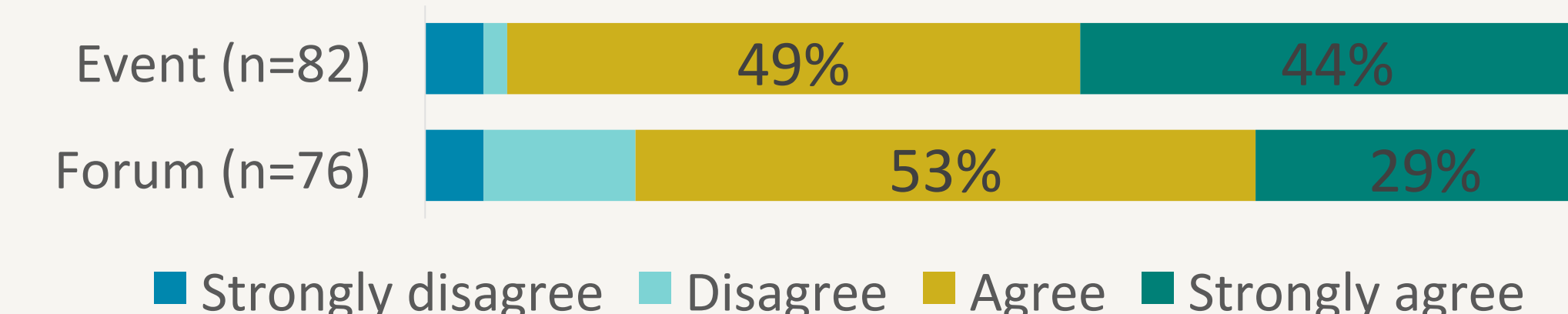
Visitors enjoyed the Building with Biology events.

I enjoyed this event. (n=84)



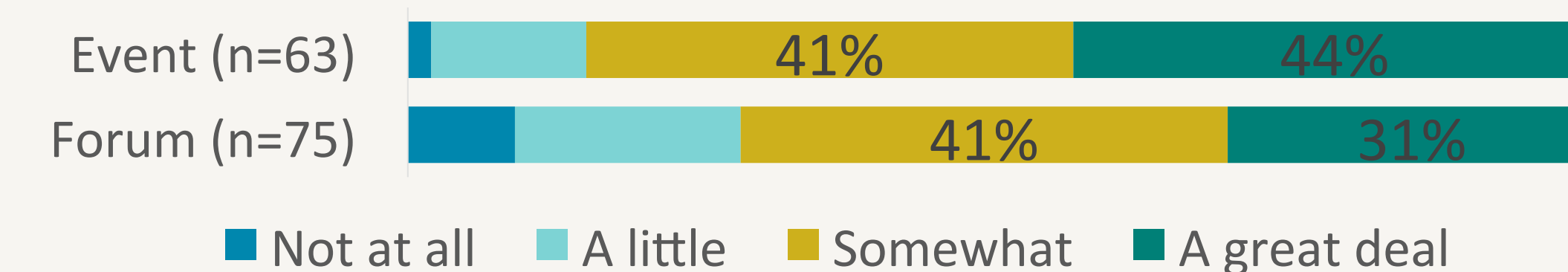
Attendees learned about synthetic biology.

I am more informed about synthetic biology than I was before this event.



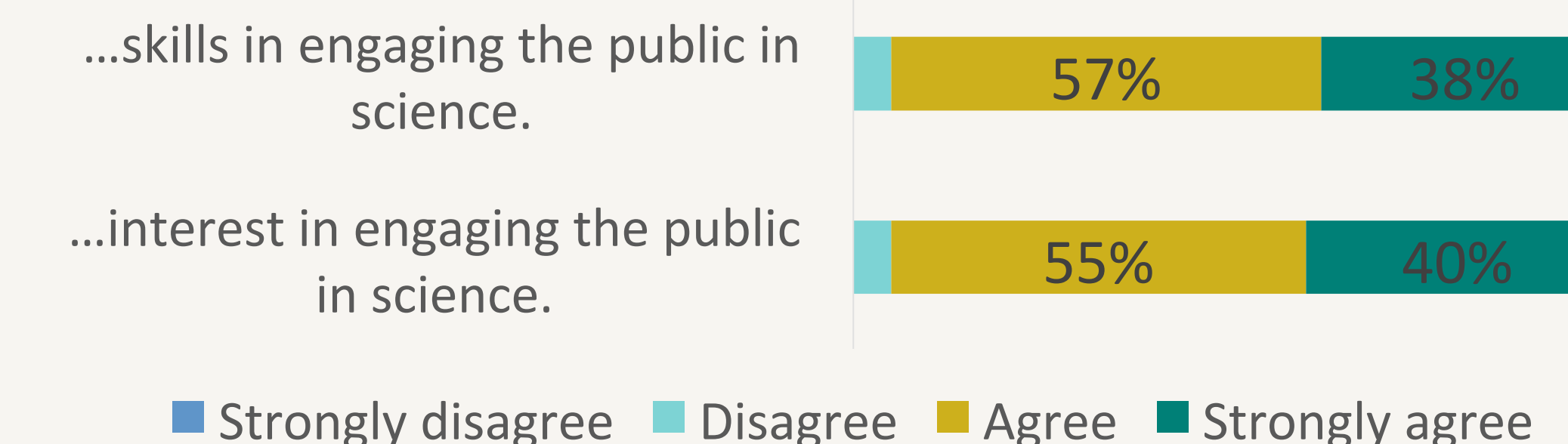
Participants' interest in future activities increased.

How much did this activity increase your interest in learning how synthetic biology is connected to your daily life?



Volunteers gained skills and interest in PES.

My participation increased my... (n=65)



Learn More

Visit our website at buildingwithbiology.org



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