

# MISSION2MARS

## Catalyzing Community Partnerships and Leveraging Content Expertise to Connect the Public with NASA's Artemis Program



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### Program Overview

Mission2Mars aimed to build a nationwide astronomy engagement program that would catalyze numerous museum and community partnerships around NASA's space exploration agenda, connecting the public with its Moon-to-Mars missions and learning resources. Over 3 years of programming, the Franklin Institute has convened a network of 10 informal science institutions (ISIs) to recruit and train community-based organizations (CBOs) and amateur astronomers (AAs) to deliver Mission2Mars programming to families and youth, with an emphasis on marginalized populations in STEM.

### Reach\*

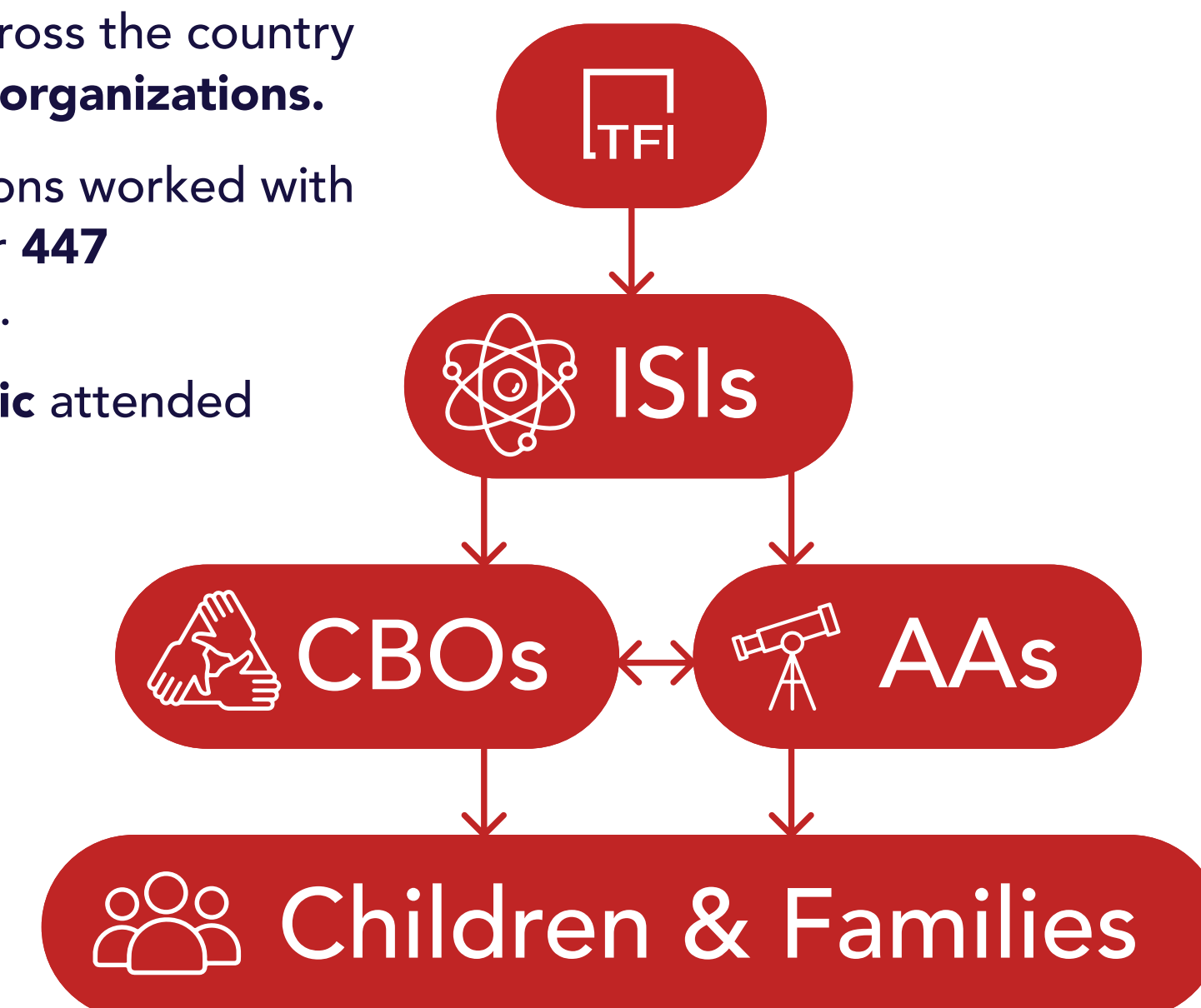
10 informal science institutions across the country worked with 68 community-based organizations.

These community-based organizations worked with 75 amateur astronomers to deliver 447 Mission2Mars events to the public.

Over 41,358 members of the public attended these events.

Between all the organizations, over 200 educators were trained in the Mission2Mars content by their informal science institution.

\*As of September 6, 2024. Programs will continue through January 2025.



### Content and Training

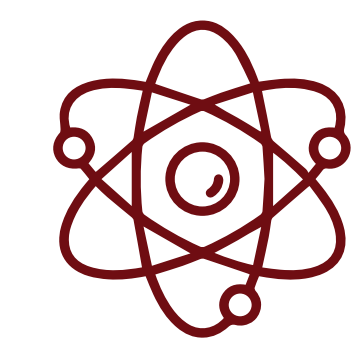
TFI, in collaboration with NASA education specialists, curated a suite of existing NASA activities and resources focused on space exploration and the Artemis mission, adapting them for ease and accessibility of CBO partners planning astronomy-themed events. Adaptations included:

- A consistent format and template for all activity materials
- Suggestions for tailoring activities to different contexts and audiences
- Grouping resources into content areas: the Moon, Mars, basic astronomy and solar eclipses\*

Professional development webinars included:

- Activity content and examples of event formats
- Strategies for building partnerships with CBOs and AAs
- Resources for training CBOs and astronomers to facilitate Mission2Mars events
- Current astronomy and Artemis mission updates
- Ongoing community meetings

\*While not directly applicable to the Artemis mission, the 2023-24 US eclipse events provided opportunities to leverage public interest in astronomy.



### Informal Science Institutions

Goal: To become **effective hubs** of expertise for activating their communities around NASA's Artemis program and to **build their capacity for training and engaging** marginalized communities in NASA content.

#### Relationship Building

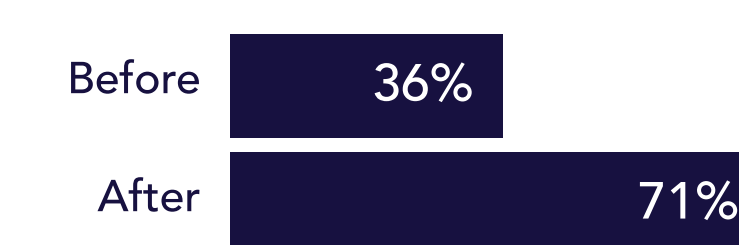
ISIs reported feeling effective developing or maintaining a relationship with CBOs. New partnerships between ISIs and CBOs are blossoming as a result of M2M and both are optimistic about the future of their relationships, despite identified barriers.

#### Training

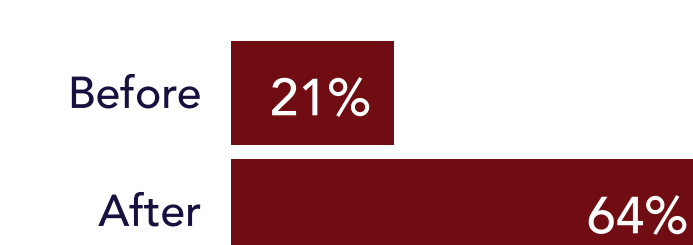
Comparing confidence levels of ISIs between pre-program and their current point in the program trajectory, respondents reported a boost in their confidence in training CBOs and AAs.

Thirty-five percent more informal science institution survey respondents now feel "Very confident" to train their staff to coordinate and facilitate events, and 43% more respondents feel "Very confident" to train amateur astronomers to support these events. (n = 14)

Training community-based organization staff to coordinate and facilitate astronomy events.



Training amateur astronomers to support astronomy events.

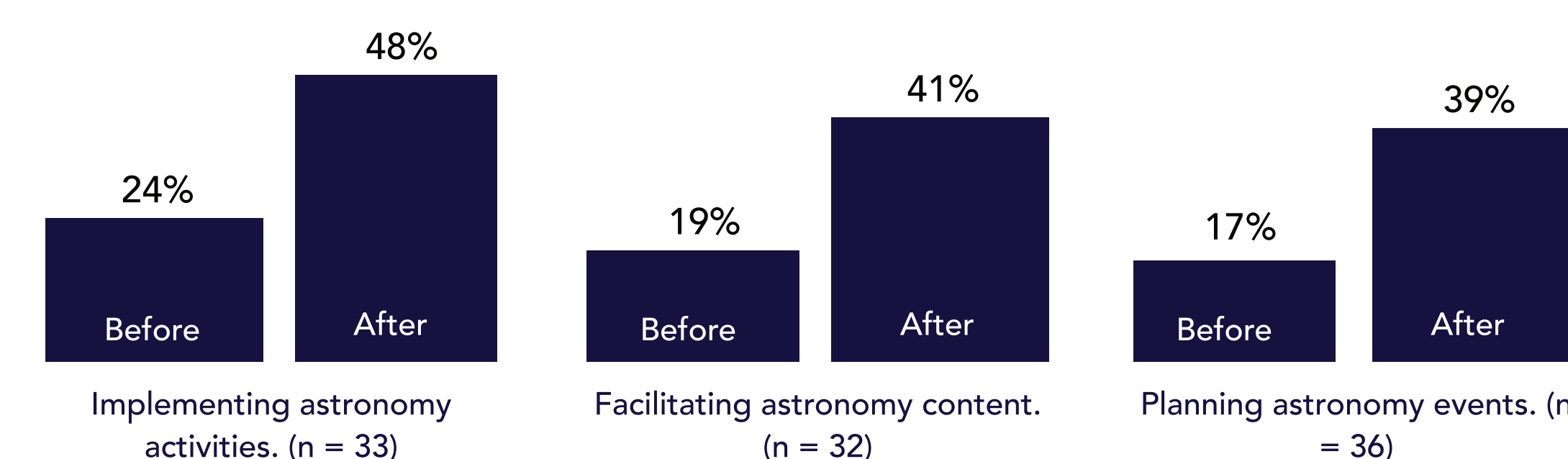


### Community-Based Organizations

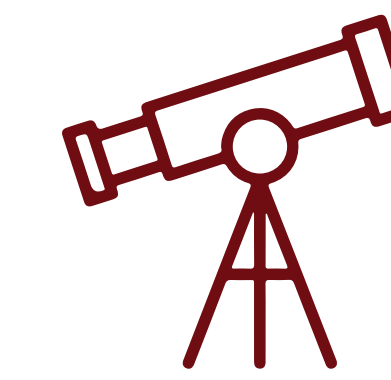
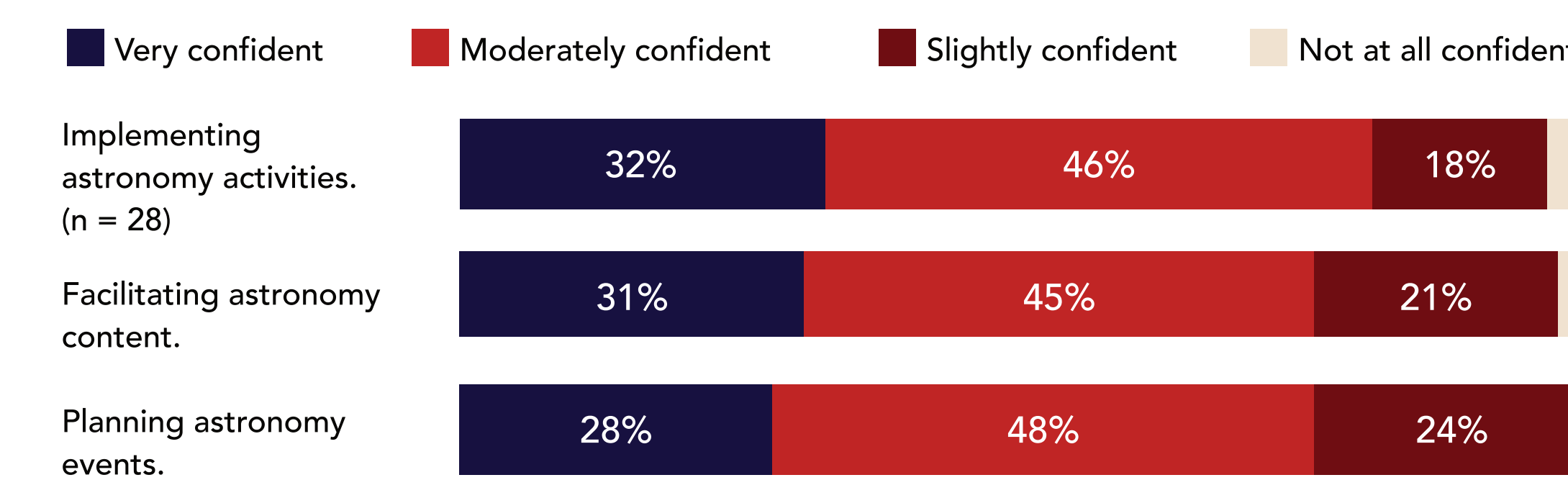
Goal: To build knowledge, skills, and confidence in **science communication**; increase capacity for **hosting engaging science events** for children and families; build effective **collaborative relationships** with museums and amateur astronomers.

In staff surveys, CBOs reported that as a result of participating in Mission2Mars, they have gained confidence in implementing, facilitating, and planning events. Additionally, CBOs gained new program content and activities, deepening their knowledge about space and their interest in astronomy.

Overall, more Cohort 2 community-based organization staff survey respondents report feeling "Very confident" implementing, facilitating, and planning events.



The majority of Cohort 1 community-based organization staff survey respondents feel "Moderately confident" or "Very confident" about planning events, facilitating content, and implementing activities. Unless otherwise noted, (n = 29)



### Amateur Astronomers

Goal: To build knowledge, skills, and confidence in the implementation of **engaging astronomy programs**, specifically Artemis program content; and build **collaborative relationships** with informal science institutions and community-based organizations to effectively disseminate programming.

ISIs perceived AAs to be important to the program and CBOs reported they want AAs at their events, especially to help answer in-depth astronomy-related questions from children and families. AAs are well-positioned to serve as resources for community-based organization staff, however, there are continued barriers to their participation in the program including:

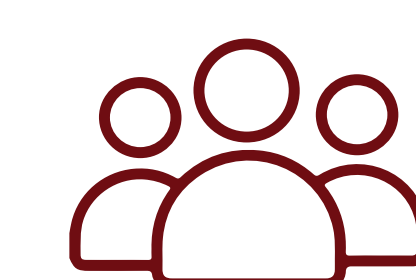
- Not having a large enough pool of AAs for the ISI or CBO to reach out to for events.
- Older adults who may be at higher risk of illness and feeling wary of the potential health risks from being around groups of people (e.g. COVID-19).
- Finding AAs who are available to attend events.
- Securing AAs who are interested in or comfortable working with youth.
- Finding AAs who do not charge a fee for participating.

Despite these barriers, AAs shared that after the program ends, they would be glad to continue attending events at their community-based organization as long as they were not too far away, and that they wanted to continue to do more events with their community.

Building Sustainable Relationships		
Phase	Timing	Overview
Phase 1: Building	Year 1	ISI initiates and supports the growth of relationships
Phase 2: Managing	Years 2+3	ISI performs active ongoing maintenance of relationships
Phase 3: Independence	At project close	CBO and AAs have a sustained working relationship

### Staff Turnover:

CBOs shared that a key takeaway from their involvement was the development of new relationships or strengthened connections with their ISI, AAs, and other CBOs. However, **the high rate of staff turnover at CBOs is flagged as a barrier to deepening relationships between CBOs and AAs, as well as CBOs and ISIs.**

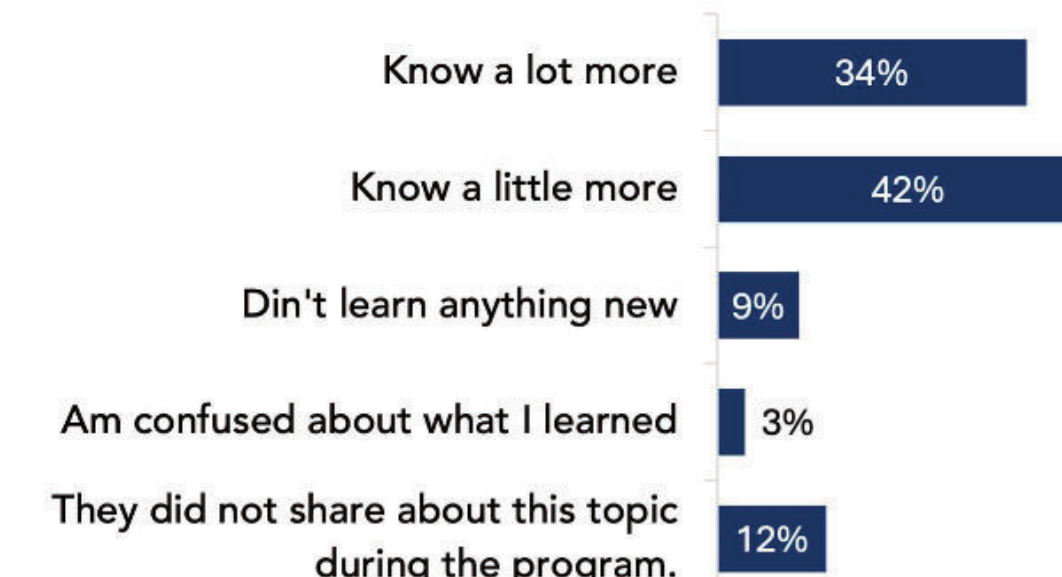


### Children and Families

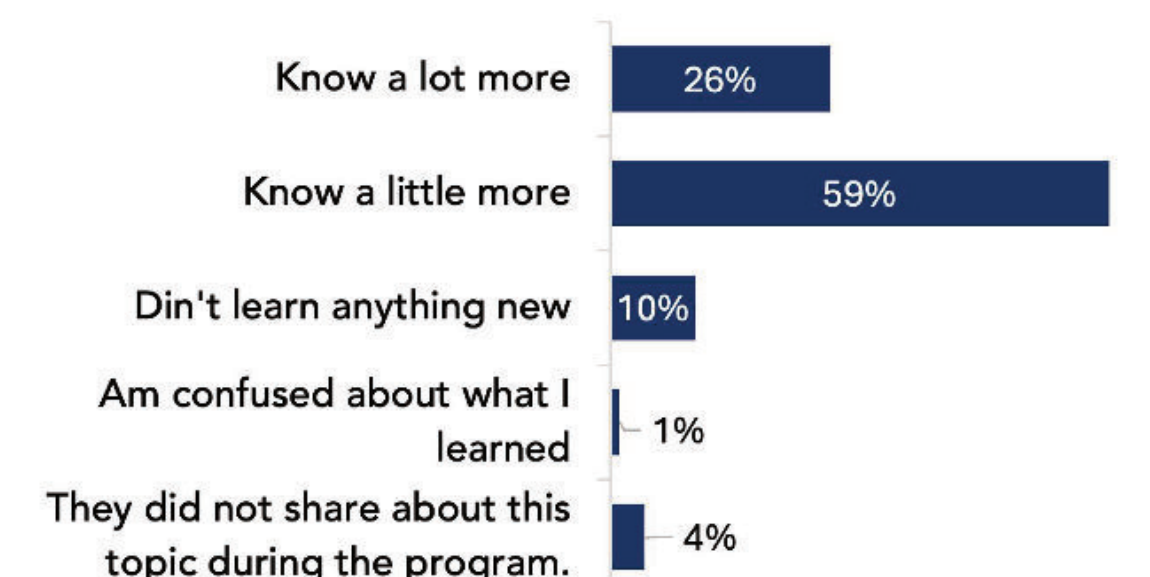
Goal: To deepen their **engagement with and awareness of** NASA's educational resources, specifically content related to the Artemis program, as well as to **connect space exploration to what they see in the sky.**

Through event surveys, we learned that M2M events attracted participants who were new to space-themed programs and to community-based organizations, and these audiences enjoyed events and learned about the Artemis program and career opportunities in STEM. However, it is worth noting that event survey responses were largely representative of one ISI, whose CBOs facilitated data collection at a higher rate; there is room to further understand event participant experience across the network.

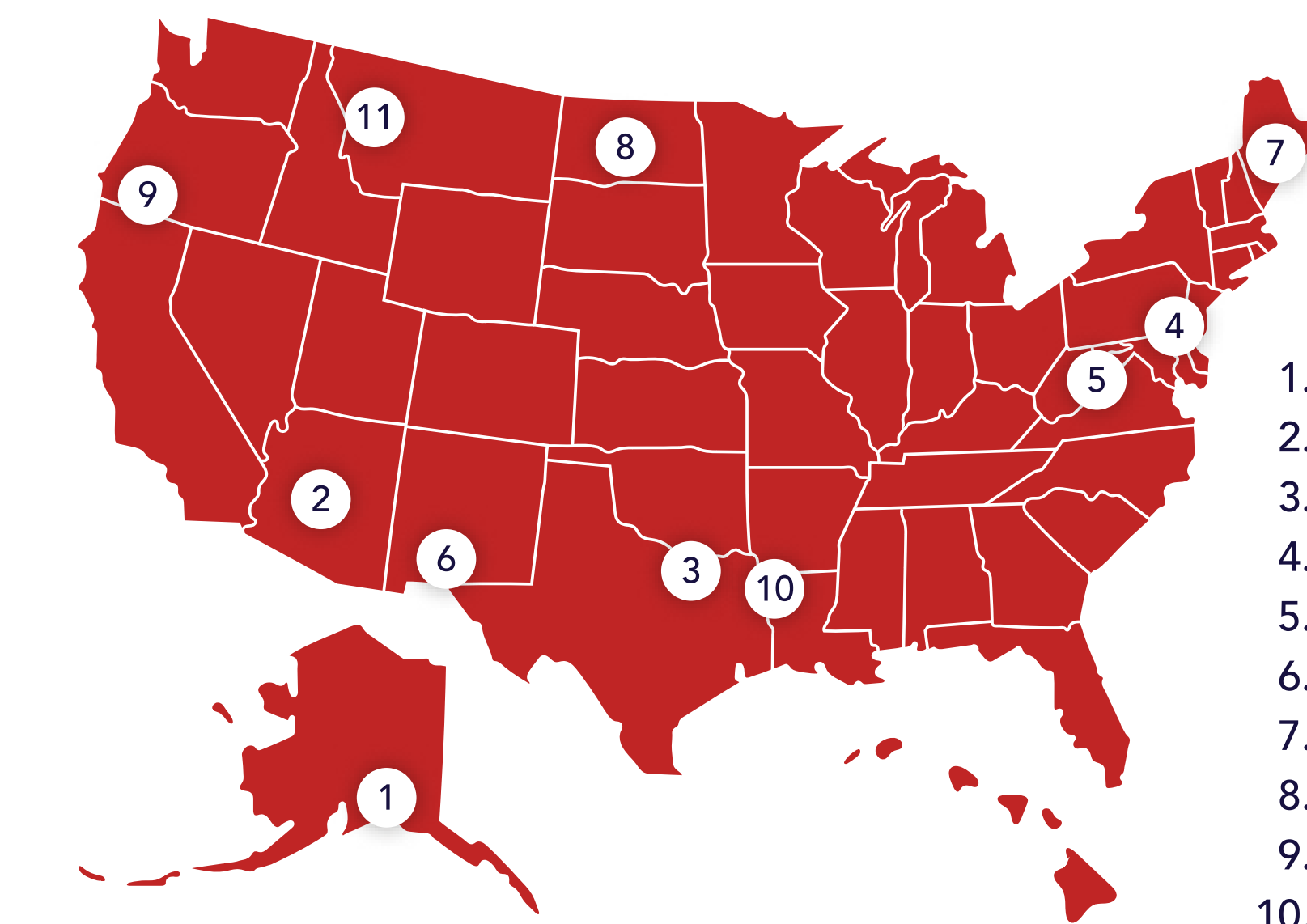
Most event survey respondents reported knowing "A lot more" or "A little more" about the Artemis program. (n = 186)



Most event survey respondents reported knowing "A lot more" or "A little more" about career opportunities in STEM. (n = 184)



### Network Map



- Anchorage Museum
- Arizona Science Center
- Fort Worth Museum of Science and History
- The Franklin Institute
- Green Bank Observatory
- Las Cruces Museum of Nature and Science
- Maine Discovery Museum
- North Dakota's Gateway to Science
- ScienceWorks Hands-On Museum
- Sci-Port Discovery Center
- SpectrUM Discovery Area

### Demographics

Groups anticipated to participate in Mission2Mars events	Approximate proportion of participants		
	0%-10%	10%-50%	50% or more
American Indian or Alaskan Native	60%	33%	7%
Asian/ Pacific Islanders	91%	9%	-
Black/ African American	74%	21%	4%
Hispanic or Latino	57%	33%	10%
Native Hawaiian or other Pacific Islander	94%	6%	-
Rural	23%	34%	43%
Urban/ Inner City (n=68)	43%	25%	32%
Women or girls	-	61%	39%

### What's Next?

Mission2Mars programming will continue through January 2025. Program evaluation and reporting will wrap up by August 2025, after which summative data will be available. Check out the program website, [mission2mars.fi.edu](https://mission2mars.fi.edu), to view program resources and the final report (when available).



Education Development Center (EDC) has led evaluation efforts to assess the effectiveness of the program in reaching its intended outcomes and impacts.

