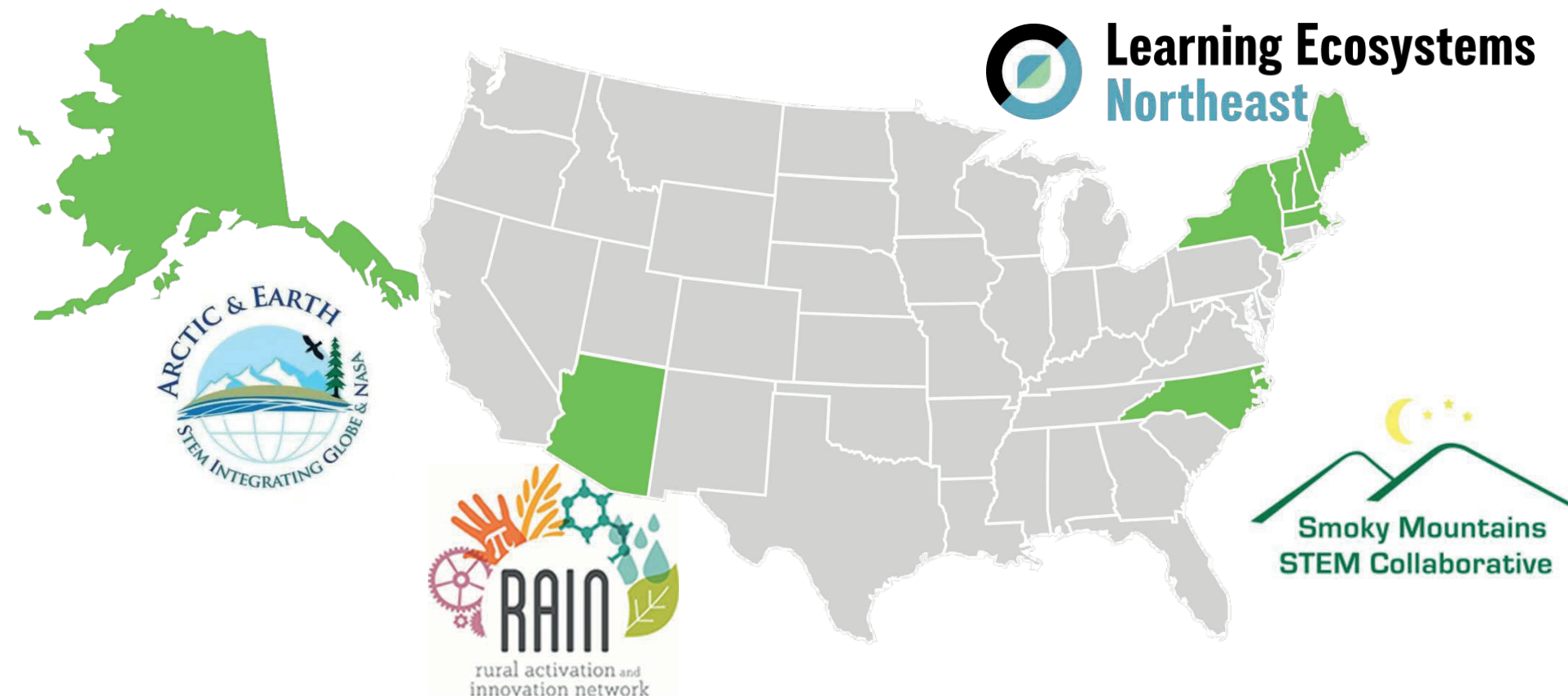


## Project background

The NASA SciAct STEM Ecosystems project seeks to uncover principles and practices through which STEM learning ecosystems (SLEs) support engaging communities with relevant and authentic learning experiences. Learnings will be used to develop broadly shared professional development resources.

The front-end research investigated alignment of theory and practice through the lens of four exemplar ecosystem projects: Arctic & Earth STEM Integrating GLOBE & NASA (SIGNs), Rural Activation and Innovation Network (RAIN), Smoky Mountain STEM Collaborative, and Learning Ecosystems Northeast. In conducting this study, we critically examined and adapted our inquiry process.



## Lessons learned

- 1. Commit time and staff capacity to building relationships.** Build up personal relationships early and throughout the project continually develop relationships.
- 2. Be flexible** to support listening and responding to contributors' needs and understanding differences in their contexts.
- 3. Practice open communication** with contributors to support critical feedback and making changes responsive to their contexts.

## Incorporating culturally responsive research practices

Ways our process differed from a traditional research process included:

- **Seeking feedback and direction from project teams in developing instruments**, enabling us to refine and ultimately create instruments that are responsive and relevant to their contexts
- **Asking project teams to identify who we should interview** to understand their project, enabling us to gather data from multiple perspectives within their SLE
- **Sharing instruments with interviewees** providing transparency and time to reflect ahead of meetings
- **Elevating individual perspectives that amplify minoritized voices** as well as identifying trends in data that represent the majority voice
- **Reflecting on data together** to check that we understand and are accurately representing their projects, to identify gaps in our data (and how to address them), and to identify additional findings

