

## RESOURCES

### Learning ecosystems and community partnerships

Center for the Advancement of Informal Science Education: *What is a STEM learning ecosystem?*

<https://www.informalscience.org/sites/default/files/BP-7-STEM-Learning-Ecosystem.pdf>

Vance, et al.: *Design for success: Developing a STEM ecosystem*

[https://stemecosystems.org/wp-content/uploads/2017/01/USD-Critical-Factors-Final\\_121916.pdf](https://stemecosystems.org/wp-content/uploads/2017/01/USD-Critical-Factors-Final_121916.pdf)

NISE Network: *Museum and community partnerships: Collaboration guide*

<https://www.nisenet.org/collaboration-guide>

Center for Scientific Collaboration and Community Engagement: *Community participation model*

<https://zenodo.org/record/3997802#.ZCbpdzMJqt>

Hive Research Lab: *Online toolkit for connecting youth to future opportunity*

<https://brokering.hiveresearchlab.org/>

### Diversity, equity, accessibility, inclusion, and belonging

Center for the Advancement of Informal Science Education: *Broadening perspectives on broadening participation in STEM*

<https://www.informalscience.org/sites/default/files/BPreport.pdf>

NISE Network: *Diversity, equity, accessibility, and inclusion (DEAI) booklet*

<https://www.nisenet.org/DEAI-tools>

NASA Cit Sci: *Communicating for inclusion* online webinar

<https://nasacitsci.gmri.org/winter-series-2022/feb-17>

Battalora, et al.: *The language of social justice*

<https://www.robindiangelo.com/wp-content/articles/social-justice-cheat-sheet.pdf>

Tsosie, et al.: *The six Rs of indigenous research*

<https://tribalcollegejournal.org/the-six-rs-of-indigenous-research/>

YESTEM Project UK Team: *The Equity Compass, a tool for supporting socially just practice*

<https://yestem.org/wp-content/uploads/2020/10/EQUITY-COMPASS-YESTEM-INSIGHT.pdf>

## Evaluation

**Traphagen & Trill: *Assessing the impacts of STEM learning ecosystems***

[http://stemecosystems.org/wp-content/uploads/2015/11/Assessing\\_Impact\\_Logic\\_Model\\_Template\\_STEM\\_Ecosystems\\_Final.pdf](http://stemecosystems.org/wp-content/uploads/2015/11/Assessing_Impact_Logic_Model_Template_STEM_Ecosystems_Final.pdf)

**National Science Foundation: *The 2010 user-friendly handbook for project evaluation***

<https://www.informalscience.org/2010-user-friendly-handbook-project-evaluation>

**Center for the Advancement of Informal Science Education: *Design evaluation***

<https://www.informalscience.org/projects/evaluation>

**Institute of Museum and Library Services: *Evaluation resources***

<https://www.ims.gov/research-evaluation/evaluation-resources>

**Friedman, et al.: *Framework for evaluating impacts of informal science education projects***

<https://www.informalscience.org/framework-evaluating-impacts-informal-science-education-projects>

**NISE Network: *Team-based inquiry guide***

<https://www.nisenet.org/tbi>

## Working with subject matter experts

**NISE Network: *Working with STEM experts***

<https://www.nisenet.org/working-with-experts>

**DiCenzo, et al.: *Inclusive science communication starter kit***

[https://inclusivescicomm.org/wp-content/uploads/sites/1568/ISC-Starter-Kit\\_FINAL.pdf](https://inclusivescicomm.org/wp-content/uploads/sites/1568/ISC-Starter-Kit_FINAL.pdf)

## Earth and space science engagement

**NASA STEM engagement: Resources for educators**

<https://www.nasa.gov/stem>

**NASA Science: Resources for educators and learners**

<https://science.nasa.gov/learners/resources>

**NISE Network: Collections of educational materials organized by themes**

<https://www.nisenet.org/browse-topic>

**Howtosome: Collections of educational materials organized by themes**

<https://www.howtosome.org/>

**NISE Network: *Earth and space learning and content frameworks***

<https://www.nisenet.org/earth-space-frameworks>

**NISE Network: Tools for making Earth and space science relevant and inclusive**

<https://www.nisenet.org/making-relevant-inclusive>

**NISE Network: *Explore Science: Earth & Space* activities**

<https://www.nisenet.org/earthspacekit>

**NISE Network: Activities for early learners**

<https://www.nisenet.org/early-learner-earth-space>

## **CASE STUDIES**

**Arctic and Earth STEM Integrating GLOBE and NASA (SIGNs)**

**Webpage**

<https://arcticandearthsigns.alaska.edu/>

**Spellman, et al: *Connected climate change learning through citizen science***

<https://www.nsta.org/connected-science-learning/connected-science-learning-april-june-2018-0/connected-climate-change>

**Learning Ecosystems Northeast**

**Webpage**

<https://www.learningecosystemsnortheast.org/>

**Rural Activation and Innovation Network**

**Webpage**

<https://www.4azrain.org/>

**Smoky Mountains Collaborative**

**Webpage**

<https://www.southwesterncc.edu/stem/smokymtnstem>