

Introduction

The Afterschool Science Network Study investigated afterschool science offerings at a representative sample of sites from across all regions of California. Our aim was to construct a comprehensive description of afterschool science to understand access – both opportunities and barriers – for elementary-aged children to participate in rich informal science activities. To construct this description, we examined the frequency and nature of science activities across sites, what instructional materials sites use, how afterschool staff plan and enact science, the sources of support for staff to enact science, and the networks between sites and intermediary organizations that support science.

Study Context

Five-year examination of informal science in California's After School Education and Safety (ASES) program

Why focus on California?

- A system at scale (4,100+ sites)
- Broad diversity of participants and programs
- Stable funding = stable programs
- Stable programs = best chance to document partnerships

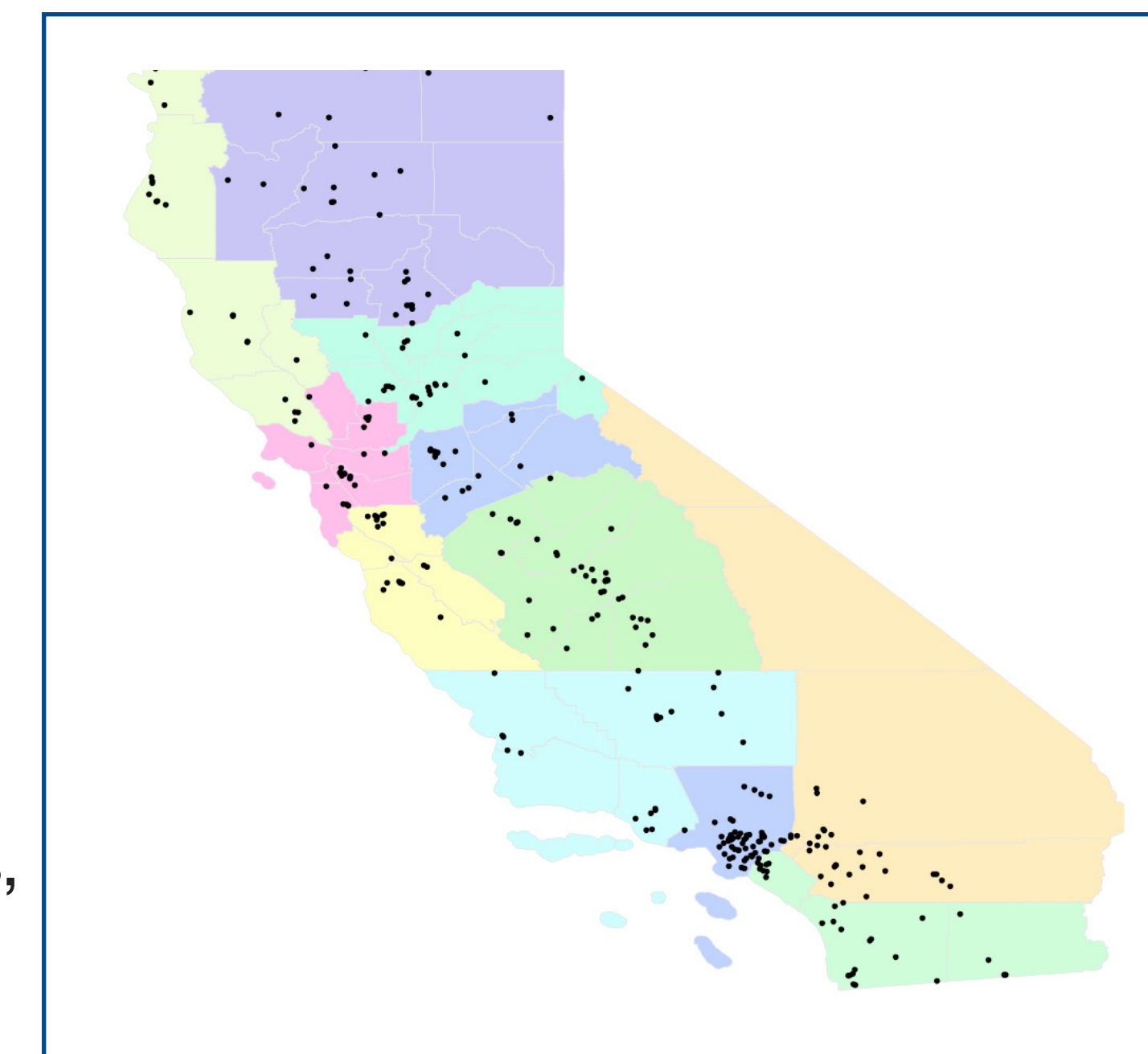
5 Study Components

Program Survey	Gathered information regarding science offerings, science materials, and partnership. Sampled to represent ASES programs (n=415). (2010-11)
Case Studies	Observed science & interviewed staff, site coordinator, and partners. Sampled for programs with rich and frequent science (n=9). (2011-12)
Support Partner Survey	Interviewed or surveyed all available organizations named by sites as science partners regarding the supports they provide (n=61). (2012)
Instructional Materials Analysis	Examined the materials sites use for science, focusing on the support features included in different types of materials. (2013-14)
Social Network Analysis	Used SNA to examine connections among sites, their partners, and the partners of partners. (2013-14)

Findings

Science and Site Characteristics

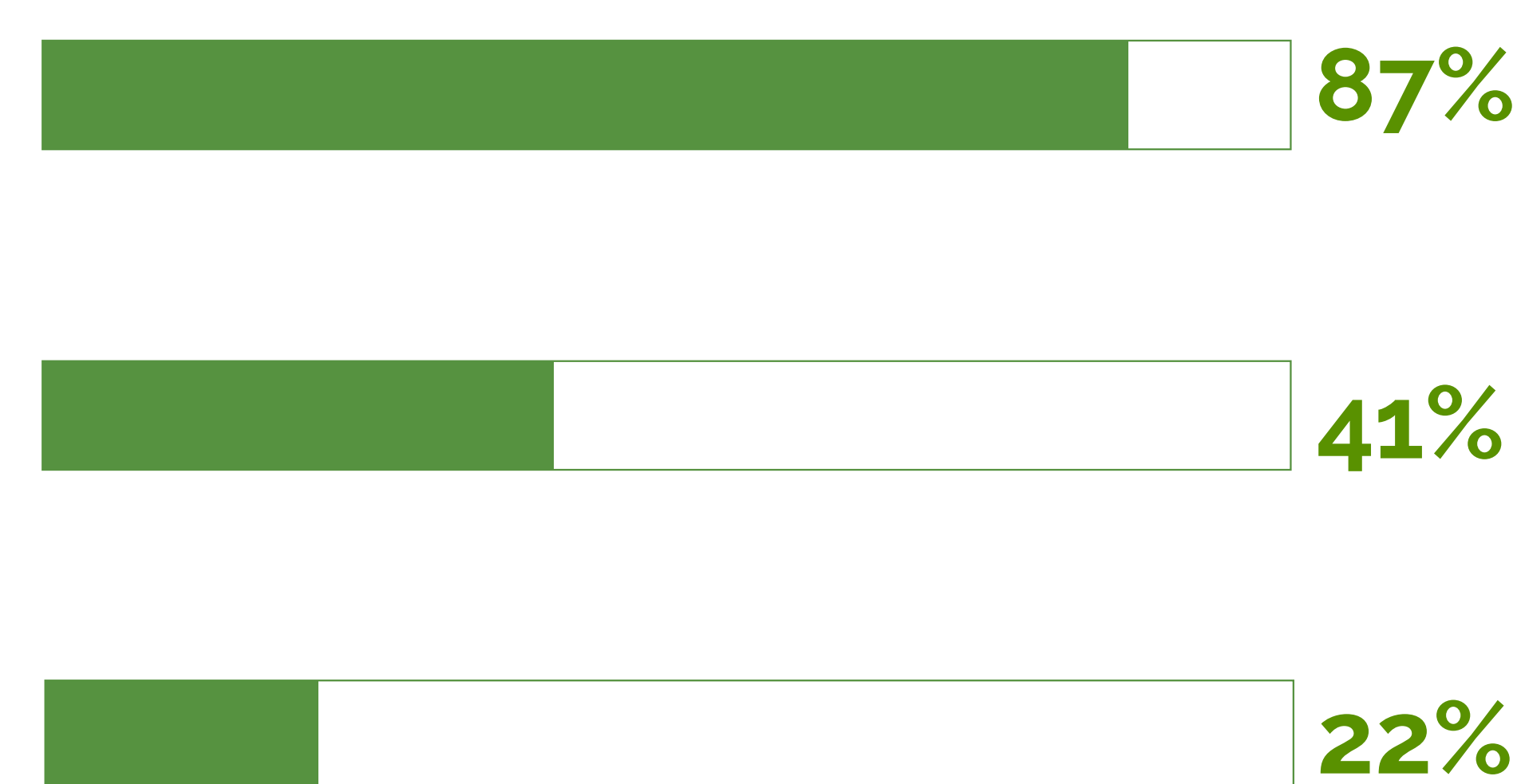
- While 87% of sites reported offering science in the school year, the frequency of science offerings was low on average. Only 30% of sites offered science once per week, while 39% offered science less than once a week on average.
- Four site characteristics were associated with more frequent science, more inquiry practices, connecting to youth's interests, and opportunities for youth choice and leadership:
 - Having a partner who supported science programs
 - Having a staff member responsible for science
 - Having staff members with knowledge of science
 - Having staff members with knowledge of the nature of afterschool activities



Locations of Sites That Responded to Survey

Science Offerings and Site Resources	Frequency of science	Inquiry practices	Connecting to student interests	Student choice/ leadership
Staff member responsible for science	+	+	+	+
Certified teachers in general program		-		
Certified teachers involved in science	+			
Staff understanding of the nature of afterschool activities	+	+	+	+
Staff knowledge of science	+	+	+	+
Staff knowledge of science curricula/standards	+	+	+	+
Higher youth: staff ratio	-			
Higher staff turnover		-		-
Having a partner to support science	+	+	+	+

Focus on Inquiry

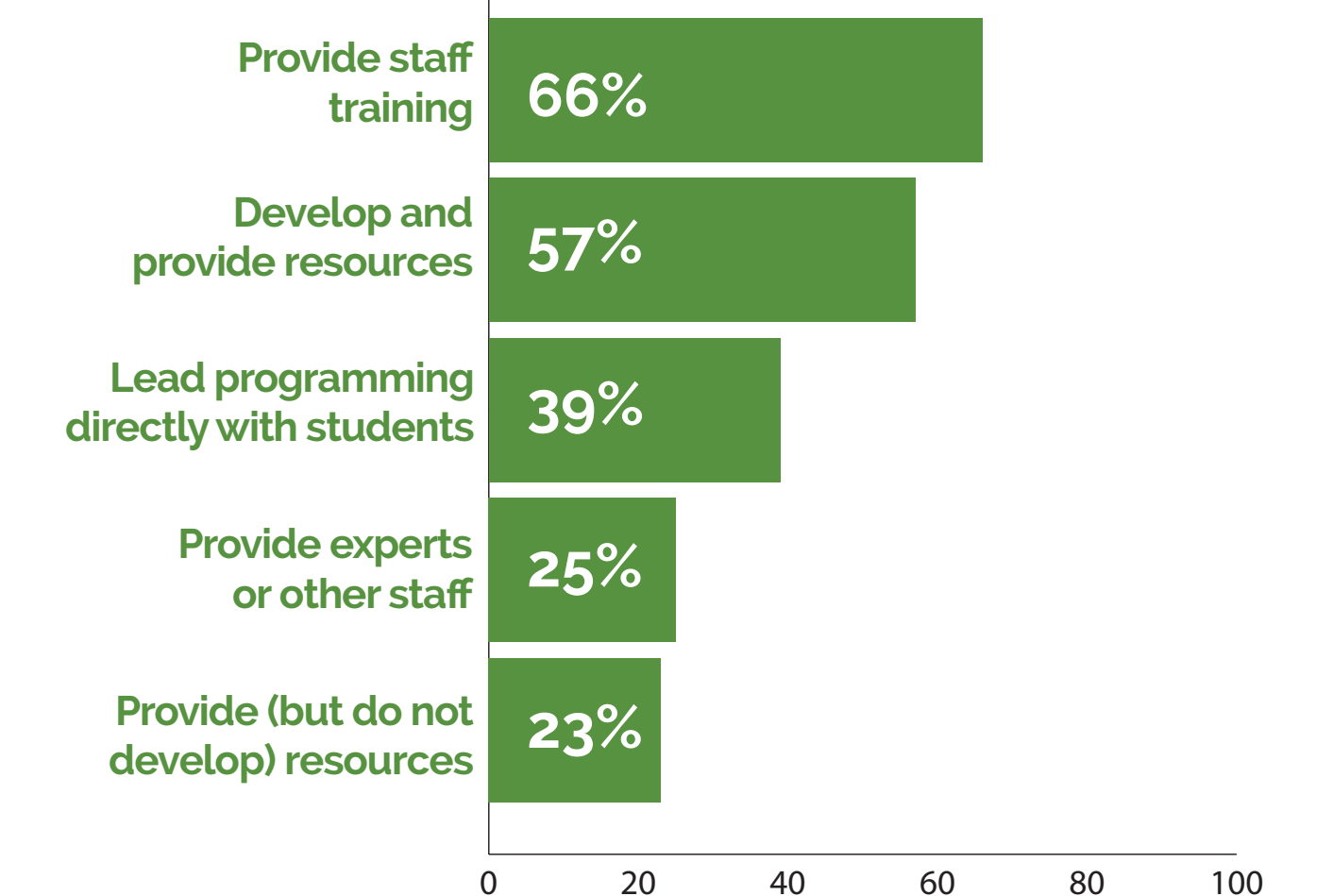


Most afterschool sites (87%) offer science at some point during the school year. A little less than half of sites (48%) provide opportunities for youth to participate in science one a week or more. Less than a quarter of these sites (22%) also provide youth opportunities for deeper learning science experiences, where students can ask questions, explore issues of relevance to them, work to form answers, and discuss this work with peers and staff.

Network & Partners

- Networks of support were not centralized or extensive
- The network was generally made up of 1:1 connections, with some signs of nascent network components

What Partners Provide



Instructional Materials

- Sites selected materials that were fun, easy to use, and had support features to help staff lead activities, such as discussion questions
- Sites mostly used materials from the Internet and activity books, though curriculum materials had more support features for staff members
- Sites planned one session at a time – even when they used curriculum
- Sites are constrained by time and staff's lack of science background

Statewide Forums

SRI Education and the California Afterschool Network, hosted four forums in 2014 with key actors in the California afterschool and informal science field to:

1. Disseminate research findings about the state of science education in California's afterschool programs, and
2. Develop recommendations for the future of afterschool science.

Framed by the research findings, the forums engaged a variety of funders, policy makers, researchers, program operators, and others whose daily work influence and shape afterschool experiences for youth. From these discussions, a set of recommendations is being produced to provide specific guidance, rooted in research, that can help move the field closer to a shared vision of rich afterschool science.