

Project: Science Firsthand: Partners in Discovery
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Project Website: <http://http://journal.firsthandlearning.org/home/>

Lead Organization: First Hand Learning
2495 MAIN STREET
BUFFALO, NY 14214

Diane Miller
St. Louis Science Center
Senior Director, Public and Community Programs
dmiller@slsc.org
314-533-8784

First Hand Learning

Organizations & Staff: First Hand Learning
Marilyn Sozanski
First Hand Learning
Project Assistant
marilyn.sozanski@gmail.com
716 8318722

Peter Dow
First Hand Learning
Principal Investigator
peterbdow@gmail.com

Project Categories: Programs

How to Reach Primary Target: First Hand Learning and the St. Louis Science Center collaborate with community center staff and mentoring organizations to recruit and train volunteer adult mentors to investigate science subjects with youth at the community center or at the Taylor Community Science Resource Center.

How to Reach Secondary Target: Same as above and a boat-building program and a summer employment program with youth at the centers.

General Demographics: Urban, low income, public and charter school attendees

Funders

Funders: National Science Foundation

4201 Wilson Blvd
Arlington, VA 22230
<http://www.nsf.gov>

Evaluation and Field Testing

Program Evaluation and Research Group at Lesley University
Lesley University
Evaluators: 29 Everett St
Cambridge, MA 02138
<http://www.lesley.edu/perg.htm>

Evaluation Strategy: A combination of qualitative and quantitative data collections methods (interviews and surveys)

Project Descriptions

Science Firsthand—Partners in Discovery (SF) is a five-year Informal Science Education (ISE) program funded by an award to First Hand Learning, Inc. (FHL) by the National Science Foundation in March 2005. It is a partnership between Buffalo, New York-based FHL, the St. Louis Science Center, and the National Wildlife Federation (NWF). First Hand Learning is a non-profit organization founded in 1998 to promote inquiry-based teaching, learning from direct experience, and closer links between cultural institutions and schools. This project is designed to support high-risk urban youth ages 10–15 as they investigate science in ongoing after-school settings such as community-based organizations (CBOs) and other community centers. Youth are paired with adult mentors, and as co-investigative teams they carry out observations both indoors and outdoors, identifying phenomena of interest to them, and pursuing related investigations. The three most important objectives SF hopes to achieve are: • That urban youth will become engaged in the long-term study of a scientific topic of compelling personal interest • That this interest will result in an increased confidence in their own mental capacities and in their ability to learn • That this growing confidence in the power of their own minds will result in improved academic performance in school

The St. Louis Science Center and FHL are each responsible for recruiting 5–8 CBOs interested in hosting SF, and securing and training mentors. Once recruited, the CBOs are responsible for identifying youth to participate in the program. Both youth and mentors are asked to commit to participate in the program on a weekly basis for a one-year period. Five mentor-mentee teams at each CBO carry out investigations and share their results at an annual Young Investigators Conference. The SF deliverables are: • An Implementation Manual: a guide for community organizations interested in establishing programs similar to SF • A Professional Development Seminar: a 2-day seminar for organizations interested in launching an SF program • An SF website: to be developed in

collaboration with the National Wildlife Federation, to reside on FHL's website • Co-Investigator Teams: the program is based on youth-adult teams and conduct investigations together • Cadres of Participating Scientists: scientists will be recruited support the work of the teams • The Young Investigators Conference: this annual conference in which the young investigators present and discuss their scientific • Scale-up: SF will begin in 2 cities with a limited number of teams and increase from 2 cities to 5 cities and 500 teams by year 5

Impact:

Data show that most of the mentors did establish positive relationships with their mentees during year 2, and that some of the pairs have developed connections that go beyond just talking about science. One of the challenges that we face as evaluators is to devise a way to capture the richness of what mentees learn within this program. Without observing the team meetings, and without speaking with the children, we rely on secondhand reports from the Youth and CBO directors as well as the mentors, who provide some useful data. The nuances of learning, changes in interest in science and confidence in learning are not easy to capture, nor are the different ways in which mentees engage in learning itself. Several comments from our interviewees have driven this point home to us. One example is a youth director who mentioned that the culture of science in her center was changing and that children who were tangential to SF were becoming more excited about science.

Lessons:

Project staff also decided that it would take a 'critical number' of youths participating in SF at one time and within each center in order to establish a solid program presence. Starting with a small cadre of mentees is really not a good idea. It's better to be strong at one center and then move on. It's hard to ramp up the infrastructure such as labs and working conditions at 7 centers simultaneously. Early in the program, it became clear that mentors needed concrete materials on site to pique the interest of their co-investigators, to support investigations, and to build the confidence of mentors. Staff realized that each center needed dedicated space in which teams could meet, in addition to some version of a science lab or room equipped with materials for investigation.

Notes:

Project staff in both Buffalo and St. Louis discovered that implementing SF—particularly the mentor program—was far more labor intensive than they had expected or were staffed to handle (i.e. recruiting, supporting, and developing resources for mentors). While the design of this project included meetings for mentors, they were originally considered orientation meetings. Staff discovered that actual in-depth training was required as well as regular, ongoing training throughout their participation.