

SciGirls

Season 3 Outreach Evaluation

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December 20, 2016

Executive Summary

Citizen SciGirls is a NSF funded six-episode season of SciGirls that focused on increasing the awareness of and engagement in citizen science projects. The episodes and educator materials were created in partnership with the Cornell Lab of Ornithology and feature six unique citizen science projects; Monarch Larva Monitoring Project (MLMP), Celebrate Urban Birds, Nature's Notebook, S'COOL, FrogWatch USA, and Seafloor Explorer (no longer active). An outreach initiative was incorporated as part of the project in partnership with the National Girls Collaborative Project (NGCP) and evaluation on that outreach was conducted to understand the impact of the Train the Trainer (TTT) model on educator's use of citizen projects in their program.

A three day TTT session was held in May 2015 at Twin Cities PBS in St. Paul, MN to train nine representatives from NGCP State Collaboratives in the SciGirls Seven and Citizen SciGirls project materials (episodes, activities). NGCP chose the nine leaders (from nine states) through an application process specifically targeting regions who had not previously received training on SciGirls research-based strategies. These trainers were then expected to hold two training sessions with up to 30 educators at each session between fall of 2015 and fall of 2016. Fourteen sessions were held reaching approximately 226 educators and concluded with an evaluation of the training.

To get a better understanding of the impact of the training, each trained educator was invited to complete a follow up survey in December 2016. Forty-five educators completed the survey and several educators agreed to participate in a follow-up phone interview. These educators were contacted to collect additional details regarding the outcomes of the training and implementation of citizen science programs at their institution.

Results Summary

Training Dates and Locations of Respondents to the Survey



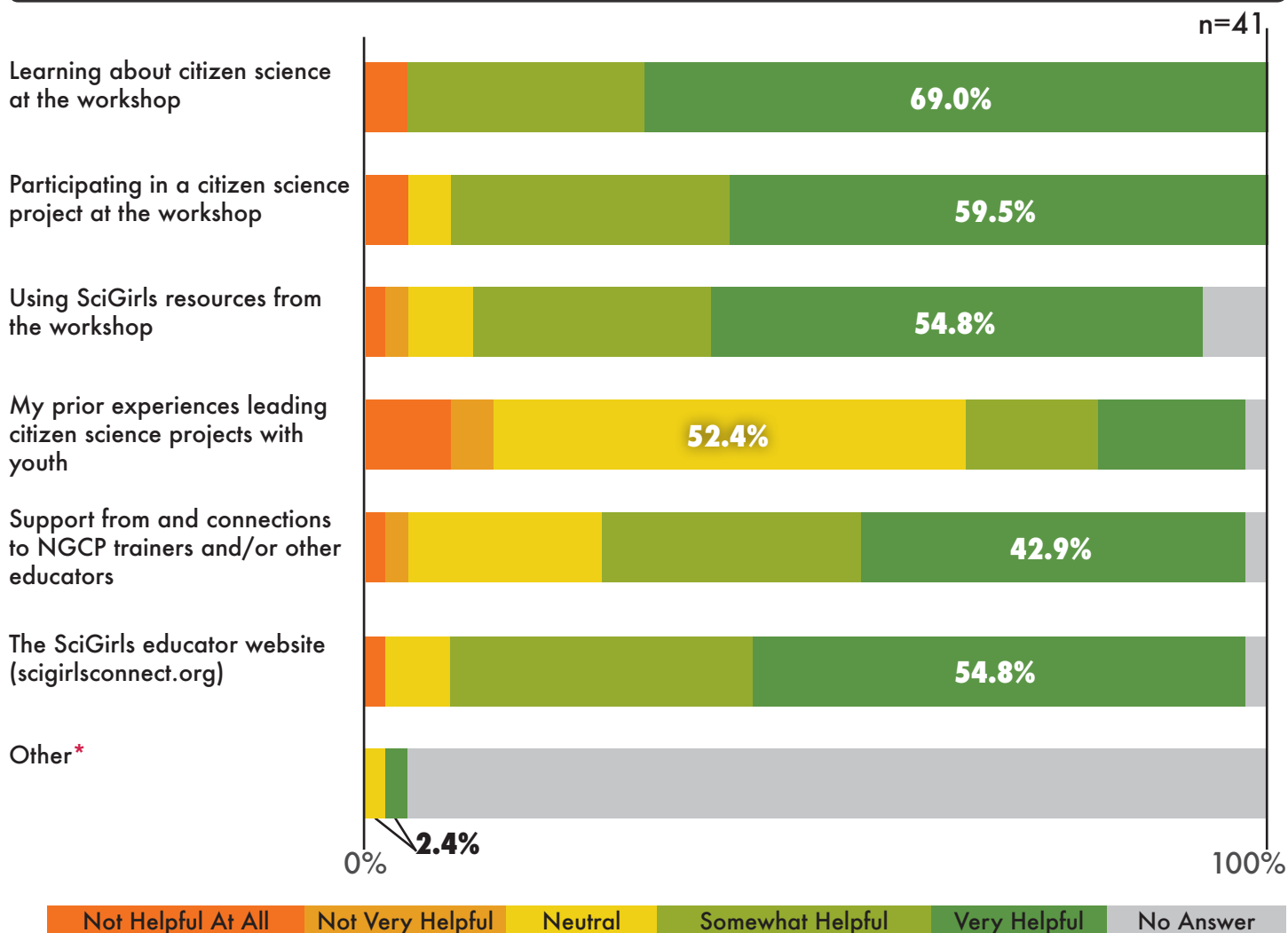
Figure 1: Training locations, dates and number of survey responses from each location. There were 3 (6.7%) who did not attend a training (n=45). Nine trainings of fourteen were represented in the responses*.

Table 1: Survey participants per training location.

Training locations	Training dates	# of people registered	# of initial evaluations collected	# of survey responses	% total evaluations
Piscataway, NJ	June 1, 2016	48	28	10	79.2%
Boston, MA	Jan 8, 2016	30	n/a	9	n/a
Portland, ME	Feb 27, 2016	30	20	9	96.7%
Bay City, MI	Feb 16, 2016	18	16	6	122.2%
Detroit, MI	Mar 2, 2016	24	n/a	4	n/a
Portland, OR	July 2016	23	6	1	n/a
Boston, MA	Jan 9 2016	19	n/a	1	n/a
Camp Hill, PA	Dec 11, 2015	18	16	1	94.4%
Terre Haute, IN	Aug 12, 2015	18	11	1	66.7%

* No respondents attended the Newport, OR; Wilsonville, OR; Indianapolis, IN; Erie, PA; nor Bangor, ME trainings.

How helpful were each of the following experiences in being able to lead youth in citizen science activities?



What changes would you suggest we make to the training to make it more helpful for you?

Paraphrased responses (n=17) : For full response, please refer to Appendix A.

To make the training more helpful, I suggest...

- ❁ Hand out an agenda beforehand
- ❁ Break up training into two days
- ❁ Discuss ideas to use in everyday classes
- ❁ Give out hard copies of lesson plans
- ❁ Include other age groups
- ❁ Make training less confusing
- ❁ More time spent with projects
- ❁ More hands on activities
- ❁ More information on how to attract participants to library
- ❁ More time for each session
- ❁ More time for each lesson
- ❁ No suggestions/was great as is (x4)
- ❁ Trainings should be longer
- ❁ Trainings tied to local education standards
- ❁ Less PowerPoint
- ❁ Less time spent on website

PRIOR TO THE TRAINING, had you ever facilitated a citizen science project with youth?

**Yes
(21.4%)**

No (78.6%)

n=42

AS A RESULT OF THE TRAINING, have you facilitated citizen science projects with youth?

Yes (42.5%)

No (57.5%)

n=40

What barriers prevented you from doing citizen science projects?

Paraphrased responses (n=21) : For full response, please refer to Appendix B.



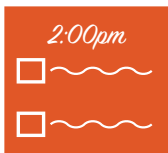
27% Time

"Time limits"



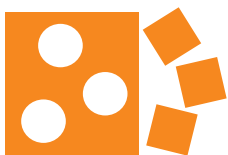
10% Staffing Issues

"Staffing issues and training for the constant training of new staff"



7% Competing Commitments

"Other job duties took precedence"



7% Didn't fit curriculum

"Most of the projects did not tie directly into my curriculum, they were a stretch..."

23%

of these respondents specifically mentioned they are planning an event for the future.

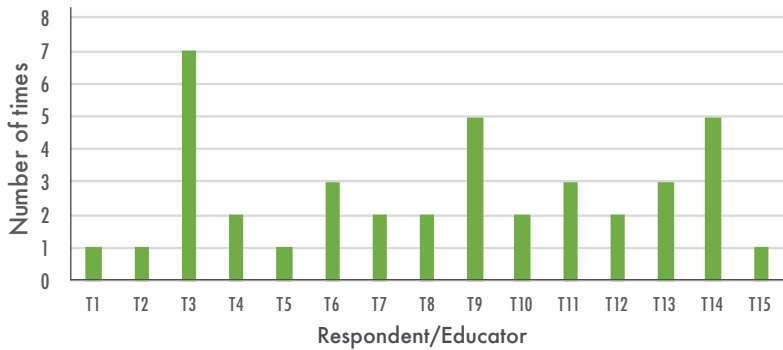
AS A RESULT OF THE TRAINING, have you facilitated citizen science projects with youth?

Yes (42.5%)

No (57.5%)

n=40

How many times have you facilitated citizen science projects with youth?



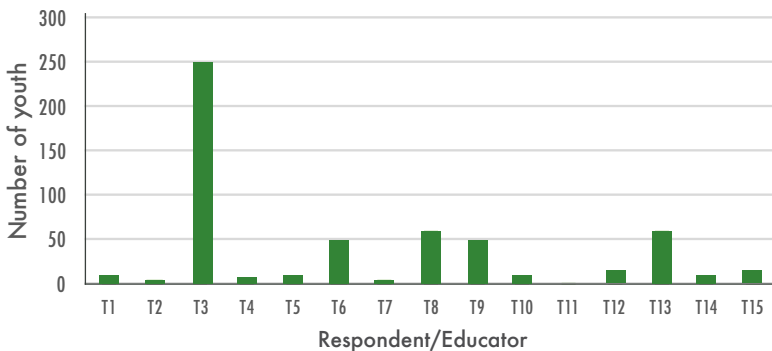
n= 15

MEAN: 2.7
MEDIAN: 2
MODE: 3
RANGE: 1 - 7



These respondents have facilitated citizen science projects a total of **40** times.

Approximately how many youth have you led in citizen science projects?



n= 15

MEAN: 37.2
MEDIAN: 10
MODE: 10
RANGE: 1 - 250



These respondents have led citizen science projects with a total of **559** children.

Which citizen science project did you participate in?
Check all that apply.

n= 15

FrogWatch USA	13.3%	Celebrate Urban Birds	20.0%
MLMP	26.7%	Nature's Notebook	40.0%
NASA S'COOL	26.7%	Other	26.7%

OTHER:

Big Butterfly Count, Maine Lake Water Quality, School of Ants, Vital Signs, local water watch

AS A RESULT OF THE TRAINING, have you facilitated citizen science projects with youth?

Yes (42.5%)

No (57.5%)

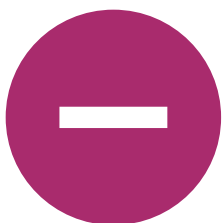
n=40

What do you think have been the positive or negative outcomes for the youth you work with as a result of participating (collecting and submitting data) in the citizen science project(s)?

Paraphrased responses (n=10) : For full response, please refer to Appendix C.



- ❁ Learning and experiencing science in a new way
- ❁ Kids love working with real/local data (x2)
- ❁ Parents and kids enjoy going at their own pace.
- ❁ Summer program impacts student academic behaviors.
- ❁ Love getting involved with nature.
- ❁ Feel connected; that they can make a difference.
- ❁ Have greater awareness of balance of nature.
- ❁ Develop sense of real-world science; enhances skills.
- ❁ Increased connectedness to/interest in nature.



- ❁ Youth need major supervision
- ❁ Lack of prior knowledge on the topic

What have been the challenges for you and your youth when participating in citizen science projects, if any?

Paraphrased responses (n=9) : For full response, please refer to Appendix D.

- ❁ Seasonal timing for certain projects
- ❁ Weather, appropriate attire, supplies
- ❁ Data collection for younger children
- ❁ Keeping students plugged in/coming back to report data
- ❁ Finding enough time
- ❁ Transportation to sites (x2)
- ❁ Focus/attention to project itself

AS A RESULT OF THE TRAINING, have you facilitated citizen science projects with youth?

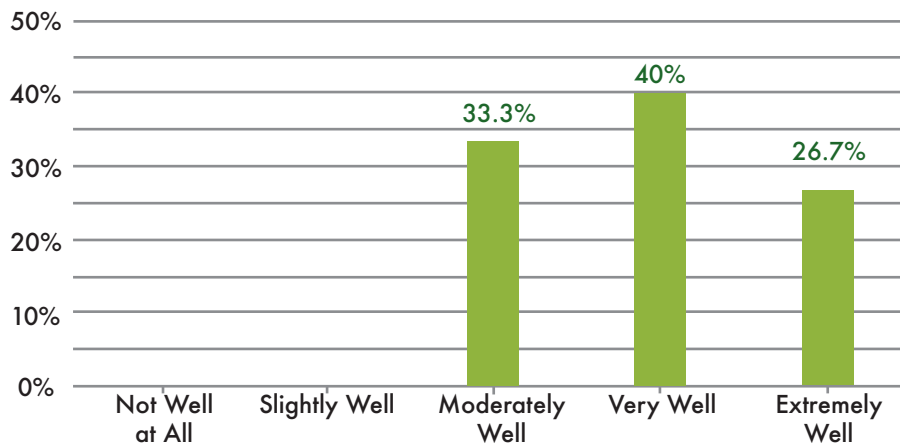
Yes (42.5%)

No (57.5%)

n=40

How well do you feel the SciGirls training prepared you for facilitating citizen science projects with youth?

n=15



Final thoughts from respondents:

"Examples of working in an urban setting with minimal resources would help me."

"I am looking forward to summer when I am able to do this type of programming as part of my Summer Reading at the library. "

"I think I need to try a little harder. I went to the training, got excited, but did not put things into practice. "

"Interesting concept, accessible to the average person"

"It's great! We need the program."

"Loved the hands-on activities with my peers during the training and working together to research different CS opps in our community."

"Presenter was great. Loved the topic"

"Worthwhile! Keep it up."

Appendix A

What changes would you suggest we make to the training to make it more helpful to you?
To make the training more helpful, I suggest that...

"Gear training to different age groups; Include younger girls"

"Have lesson plan materials to take rather than directing to the website, the website made it difficult to locate lesson plans."

"I felt the training was very useful and have no suggestions"

"I thought it was very good the way it was. I wouldn't change anything. The instructors did a great job."

"I wish it was tied specifically to the Massachusetts Science and Technology/Engineering Standards."

"Ideas are offered to use in every day classes. "

"It was too confusing to follow. I don't have enough of an understanding to even begin to come up with suggestions."

"Less time on the website portion, more time with actual projects."

"Make longer"

"Maybe 2 shorter training vs 1 long one"

"More hands-on activities and less power point slides"

"More time be spent on ways to attract participants to the library."

"More time for each session. "

"More time looking at actual lessons "

"There is a bit more detail concerning workshop curriculum prior to session"

"This was an extremely beneficial workshop and I learned so much. It was very helpful to connect with other educators at the workshop. Thank you!"

Appendix B

What barriers prevented you from doing citizen science projects?

"Change in science curriculum"

"Contact with schools, difficult"

"I am exploring citizen science projects though."

"I focused on science and tech projects. I've not had the opportunity to develop a citizen science project."

"I have planned a program in November 2016. We plan our programs far in advance so the summer dates were booked for other events."

"I will be working with the Girl Scouts who will be doing this."

"It is a curriculum we brought back to our staff but I oversee program and have not directly implemented the citizen science projects."

"Most of the projects did not tie directly into my curriculum. They were a stretch. Honestly, last school year was overwhelming for me. "

"Need more training and a place to have the program."

"Other job duties took precedence."

"Personal matters/family issues"

"Planning on it, but not ready to yet."

"Staff time, making sure I have enough interested children."

"Staffing issues and training for the constant training of new staff"

"Staffing issues. Plan on doing this March."

"Time"

"Time"

"Time limits, I will be starting ASAP"

"Time, I plan to do some this school year."

"Time. I plan to do it in the Spring of 2017."

"Understanding"

Appendix C

What do you think have been the positive or negative outcomes for the youth you work with as a result of participating (collecting and submitting data) in the citizen science project(s)?

"The parents and kids seem to enjoy being able to participate...at their own pace."

"The projects were used as a part of a public school summer school program focused on citizenship. Students participated in one week citizen science projects with the goal of exposing students to ways that math and science are used in the real world and how they can have an impact in the science community. These projects were part of a larger STEM curriculum that supported students in focusing on perseverance, collaboration, and problem-solving. We have seen an impact on academic behaviors during the current school year for students who participated in the 5 week summer program."

"They love getting involved in nature"

"Negative: Youth need major supervision....Positive: Kids love giving their time to a real project"

"Students now see themselves as learners in a way that connects to their everyday lives. They know they can make a difference no matter what their age is!"

"Greater awareness of balance of nature. Our role in nature."

"Students develop a better understanding of real world science and enhance their science skills (observations, analyzing, and collecting data)"

"It has been great [doing] data collection with students in their local town. It was much more meaningful to the students."

"Children were more connected with nature, more interested in the timing of events, etc."

"Positive: Learning about the different resources and experiencing science in a new way. Negative: Lack of prior knowledge about topic."

Appendix D

What have been the challenges for you and your youth when participating in citizen science projects, if any?

"The challenge is keeping them plugged in. Once the initial program is over it is hard to keep them coming back with the data they collected."

"The students participated in the citizen science projects during the first week in August. The timing was not great for the ladybug project (they only found one ladybug). Otherwise, it was reported that this was a worthwhile experience for the other groups."

"Environmental- weather, proper attire, supplies"

"Data collection for young children"

"Finding enough time to collect and analyze data."

"Getting transportation to the sites"

"Transportation an investment in the project"

"Focus and attention to projects"

"We are more aware of our connection to science"