



EVALUATING THE 4-H SCIENCE INITIATIVE:

Year 2 Findings and Recommendations

INTRODUCTION/OVERVIEW

4-H YESTERDAY, TODAY, AND TOMORROW

Since the 4-H Youth Development Program began in 1902, 4-H youth have been engaged in hands-on learning experiences that bring innovation and understanding of land-grant colleges and university research to local communities. Understanding and appreciating the role of science, engineering, technology, and applied math is even more critical today as the needs of our society and its workforce change. Now, more than ever, we must ensure that our nation's youth develop the necessary competencies and abilities for the United States to remain competitive in the 21st century.

4-H SCIENCE

4-H Science programming is implemented by 109 Land-Grant Universities and Colleges (LGUs) in more than 3,000 counties as a part of the Cooperative Extension System. National leadership is provided by 4-H National Headquarters at the National Institute of Food and Agriculture, USDA, and National 4-H Council, which is the national nonprofit partner of 4-H and the Cooperative Extension System. Through a partnership with the Noyce Foundation, National 4-H Council has contracted with Policy Studies Associates (PSA) to evaluate the implementation of the 4-H Science Initiative.

4-H SCIENCE: COMMENTS FROM OUR LEADERSHIP

Donald T. Floyd, Jr.
National 4-H Council President and CEO

“ Our nation is falling behind other countries in the fields of science, technology, engineering and math. That's why it's more important than ever for young people to be engaged in and excited about scientific exploration. The key to that engagement is our talented and passionate 4-H staff and volunteers across the nation who deliver high-quality positive youth development experiences to over 6 million young people. We are so grateful for all the amazing work that they do. ”

Lisa A. Lauxman, PhD
Director, 4-H National Headquarters

“ Positive youth development is achieved by connecting youth with the content they are passionate about, increasing the professional competencies of our staff and growing our capacity for delivering high quality programs. Our best opportunity to help youth achieve outcomes in science is through a strategic blend of high quality content and positive youth development context. ”

IMPLEMENTATION STUDY - METHODS

In year 1 of this study, a survey was used to gather quantitative data from LGUs to report their progress of implementing 4-H Science programs (year 1 findings are referenced throughout this report). The current evaluation, year 2, was designed to gather more detailed information about key topics such as (1) state-level implementation of the Science Initiative and (2) the process and content features of successful science programs. Information presented in this Year 2 Implementation Report was gathered through the use of (1) in-depth interviews with 29 state and county 4-H staff affiliated with 9 Land Grant Universities representing each extension region and (2) in-person group interviews with 53 Science Team members from 44 LGUs during the 2010 4-H Science Leadership Academy. Collectively, these efforts provide insight into how 4-H Science programs are being implemented across the nation.



SUMMARY OF LGU INTERVIEWS: FINDINGS AND RECOMMENDATIONS

Conversations with state and county level 4-H staff revealed their current efforts to implement the Science Initiative as well as their flagship science programs.

- Six promising features of 4-H Science programs highlighted by county and state level staff include:
 1. Youth-centered content delivery,
 2. Experiential learning,
 3. Real-world applications of science,
 4. Opportunities for youth to contribute to their communities through science,
 5. Positive youth development strategies, and
 6. A focus on moving youth through the educational pipeline toward science-related careers.

SUMMARY OF THE LEADERSHIP ACADEMY FOCUS GROUPS: FINDINGS AND RECOMMENDATIONS

The purpose of the 4-H Science Academy was to bring together 4-H staff to gain and share knowledge to further 4-H Science programming at their LGU in the following five areas:

Professional Development

- Year 1 found that 84% of LGUs who provide 4-H Science professional development reported using a train-the-trainer format.*
- Both online and face-to-face professional development opportunities are developed and utilized through state-level leadership teams that are focused on specific content and are useful to the typical volunteer (i.e., a parent).
 - > “We try to start with a face-to-face training. We find communication after that is a lot more fruitful than if we’ve only had an electronic relationship.”
- Recommendations include: (1) developing volunteer training in both content knowledge and positive youth development skills, (2) developing training materials that calibrate traditional 4-H Science programming to meet 4-H Science standards, and (3) securing funding for professional development opportunities.

Fundraising

- 73% of LGUs reported soliciting funding or in-kind donations from businesses, in year 1.*
- Large national and multinational corporations are very interested in funding local programming, specifically in locations where they have either offices or plants.

- Recommendations include: (1) recognizing the impact that businesses often want to make on local communities, ranging from workforce development to community development; and (2) approaching businesses with the ideas for supporting specific programming, and not 4-H, generally.

Evaluation

- It was found in year 1 that 40% of LGUs reported using surveys, focus groups, or observations to assess 4-H Science programming.*
- Evaluation takes place at both the state and local levels, but it is more commonly found at the state level.
- Recommendations include: (1) developing more opportunities to learn from one another’s evaluation experiences, (2) training on strategies to select programs to evaluate and how to evaluate programs that meet on an irregular or infrequent basis, and (3) ideas for conducting evaluations when local staff may have limited capacity to take on this type of task.

Marketing

- 81% of LGUs in year 1 reported that they had success in marketing 4-H Science programming to local schools and requesting their involvement and support.*
- States are redesigning their web pages and marketing materials, as well as developing artwork and templates which counties could use when creating fliers to promote specific programs.
- Recommendations include: (1) Nationally developing more marketing materials that can be customized and used in their communities and (2) finding a centralized location to share marketing materials across states.

Curricula

- Year 1 found that 73% of LGUs are currently identifying science curricula and sharing them with programs.*
- Science curricula should be engaging and relevant to youths’ everyday lives, include adequate support for delivery, offer options for adaptation for multiple audiences and settings, and ideally offer a direct or indirect connection to service learning.
 - > “Rather than just cleaning up the river one day a year, you’re looking at monitoring the river and seeing the health of it...It gives a deeper meaning to that.”
- 4-H has the capacity to build the science skills of youth through new science and technology programming as well as through more traditional 4-H areas such as agriculture, animals, and nutrition.
- Recommendations include: (1) greater availability and affordability of staff and volunteer training opportunities, (2) developing adaptable curricula for local needs and national guidance on revising curricula, and (3) increased networking opportunities to learn what other states are doing.

* This data is representative of findings found in the Year 1 Implementation Study

CONCLUSION

As a result of the Year 2 Implementation Study, many insightful components of 4-H programming were revealed which will lead National 4-H Leadership and LGUs to a stronger and more replicable model for implementing 4-H Science Programming. Findings from this wave of the Implementation Study will continue to inform resource allocation and the development of future tools and materials.



ENROLLMENT SURVEY

Annually, a survey capturing the current status of 4-H Science Ready programming and youth enrollment nationwide is conducted. Enrollment surveys were completed by 49 of the 59 LGUs with completed 4-H Science Plans of Action, for a response rate of 83 percent. Findings representing the 2009 programming year included (not every LGU participating was able to answer every question):

- 34 of the 49 LGUs reported a total of 915 Science Ready programs with an average of 31 Science Ready programs per LGU. A "Science Ready" 4-H experience is a program that is framed in Science concepts, based on Science standards and intentionally targets the development of science abilities and the outcomes articulated by the 4-H Science Logic Model. Additionally, it integrates the Essential Elements and engages participants in experiential and inquiry based learning.
- 34 LGUs reported a total of 1,040,476 youth enrolled in Science Ready programs. For 86,196 of these youth, 2009 was their first year in 4-H
- Among the 27 LGUs able to provide information about the curricular areas covered by their programming, animal science (20%) and environmental science (15%) curricular areas were reported offering the most science programming.



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