

Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process

by
Sandra Wever Frerichs, M.A.
Nebraska State Museum

and

Amy N. Spiegel, Ph.D.
Center for Instructional Innovation

May 2003
Revised April, 2004

Wonderwise Women in Science Learning Kits

Funded by the National Science Foundation
Produced by the University of Nebraska State Museum
and Nebraska 4-H



This material is based upon work supported by the National Science Foundation under Grant 9909496. Any opinions, findings and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation (NSF).

Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process

Table of Contents

Lists of Tables	3
Lists of Figures	4
Executive Summary	5
Introduction	6
Focus of the Evaluation: Dissemination Plan	8
Evaluation Questions	9
Evaluation Plan and Procedures	10
Limitations	11
Results	12
1. Recruiting and organizing state 4-H partners	12
a. Summary	12
b. Interpretation of findings	14
2. Piloting and revising original Wonderwise kits	15
a. Summary	15
b. Interpretation of findings	17
3. Using workshops to introduce the Wonderwise 4-H kits	18
a. Summary	18
b. Interpretation of findings	24
4. Utilizing grant resources	25
a. Summary	25
b. Interpretation of findings	29
5. Using Wonderwise within each state 4-H program	30
a. Summary	30
b. Interpretation of findings	37
Conclusions and Recommendations	38
Appendix A	44

Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process

List of Tables

Table 1: Percent of 4-H youth within each partner state by size of place of residence	7
Table 2: Feedback from piloting by 4-H educators and resulting changes to kits	16
Table 3: Wonderwise 4-H workshops led by Wonderwise Workshop Leader	19
Table 4: Wonderwise 4-H workshops conducted by partner states and their staff	21
Table 5: Conference presentations of Wonderwise 4-H	23
Table 6: Total number of each kit purchased by partner states	28
Table 7: Spending patterns within the partner states	29

Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process

List of Figures

Figure 1: Wonderwise 4-H partner states	6
Figure 2: Utilizing Grant Resources	26
Figure 3: Wonderwise 4-H activity levels	31

Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process

Executive Summary

Wonderwise 4-H is a three year, NSF-funded project that extends the previous Wonderwise Women in Science projects to target the informal 4-H audience. This evaluation is designed to describe, summarize, and assess the dissemination of the Wonderwise 4-H project for 4-H leaders and staff to the 10 involved partner states. The five phases of the planned dissemination included (1) recruiting and organizing state 4-H partners, (2) piloting and revising original Wonderwise kits, (3) using workshops to introduce the Wonderwise 4-H Kits, (4) utilizing grant resources, and (5) using Wonderwise within each state 4-H program. Data about the actual dissemination was gathered primarily from the state contacts in the partner states through interviews.

Personal connections and individual commitment appeared to be the most important elements contributing to the success of the project in the first phase of recruiting and organizing the partner states. However, the lack of regular, formal communications hampered the end of the piloting and revising phase in that not all the partner states were aware of the completion of the revised kits. The workshops and the concomitant distribution of kits in each of the states were well received and resulted in extensive local dissemination of kits to 4-H leaders and use with 4-H youth. The key factor for successful dissemination seemed to be providing kit resources at the same time as workshops so that when staff and volunteers left the workshop excited about the project, they had the resources to use it right away. All the partner states have used their allocated funds and have established a knowledgeable network of 4-H Wonderwise users. Reported uses of Wonderwise 4-H include over 23,000 youth and 6600 adults, and this is a low estimate of actual use due to underreporting by states.

While the local context of each partner state impacted the dissemination in different ways, the ability of Wonderwise 4-H to complement and improve existing programs was essential for all states. In addition, the focus on women scientists of color and the positive impacts on the adults who led the activities were features that made adopting and using Wonderwise more attractive. While the dissemination of Wonderwise has been more widespread in some partner states than others, all of the participating states have achieved some measure of success and continue to use Wonderwise with youth in their states.

Recommendations for future projects of this nature are drawn from the strengths and weaknesses of the dissemination of Wonderwise 4-H:

1. Create a clear plan from the onset of the project that makes expectations of partners explicit.
2. Build in flexibility that allows partners to fulfill their obligations in diverse ways.
3. Establish a structure for formal and informal communication with partners.

Dissemination of the Wonderwise 4-H Project: An Evaluation of the Process

Introduction

Wonderwise Women in Science is a series of learning kits that feature women scientists. Targeted toward upper elementary level students, each kit includes a video, CD-ROM, and activities that focus on a particular woman scientist and her work. Wonderwise 4-H is a three year, NSF-funded project that extends the previous Wonderwise Women in Science projects. In particular, its goal is to reach the informal 4-H audience as well as continue to serve the traditional formal classroom audience. The Wonderwise 4-H project broadened the scope of the earlier work and included three primary goals: 1) to revise the six existing kits to make them more appropriate and accessible to the informal 4-H audience, 2) to develop 3 new kits modeled after the existing kits, and 3) to disseminate all 9 Wonderwise kits to 4-H leaders and staff for use with youth in the 10 state participating region (see Figure 1).

Wonderwise 4-H Partner States

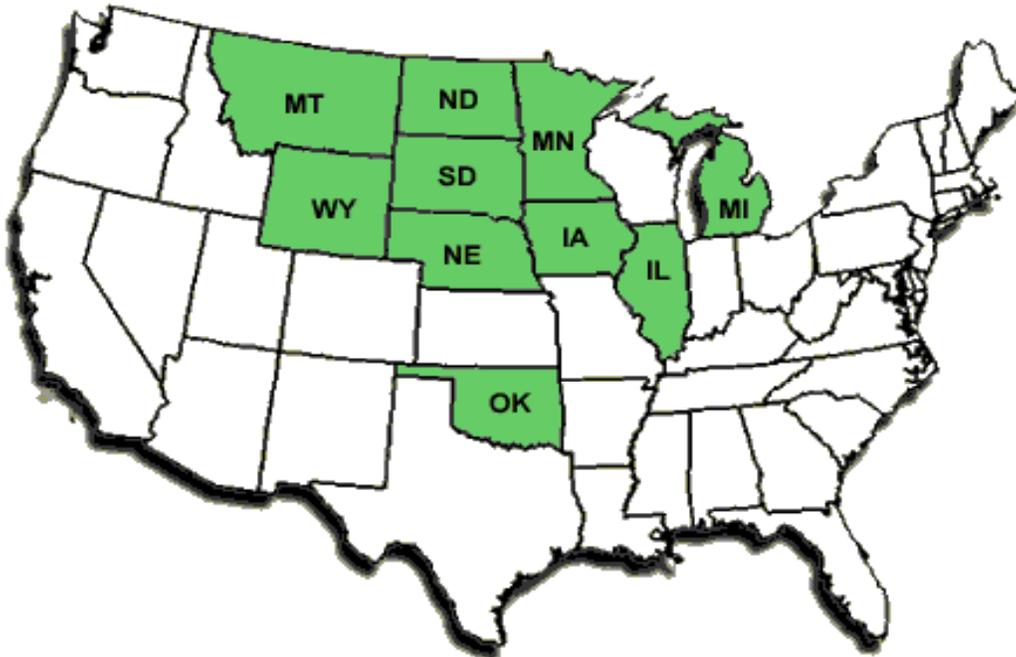


Figure 1: Map of the United States highlighting the ten Wonderwise 4-H partner states.

The Wonderwise 4-H partnership encompasses 4-H programs in Illinois, Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, Oklahoma, South Dakota and Wyoming in the Western, Central and Southern regions of the US. Together, 4-H programs in these mostly rural states served 1,375,739 youth in 2002. Table 1 illustrates how many of the youth who participate in 4-H in each of these states live in rural and urban areas. Nationwide, 45% of the youth served by 4-H in 2002 lived in towns smaller than 10,000. In the Wonderwise 4-H network, however, 52% of the youth overall live in rural areas and on farms, and this percentage is much higher in some of the partner states.

Percent of 4-H Youth Within Each Partner State by Size and Place of Residence

Partner State	Total Enrollment	% on Farm	% Rural (less than 10,000)	% in Towns (10,000-50,000)	% in Cities and Suburbs (over 50,000)
Illinois	383,654	7%	41%	26%	26%
Iowa	124,628	28%	37%	13%	23%
Michigan	281,273	13%	44%	26%	19%
Minnesota	167,970	19%	30%	25%	25%
Montana	26,193	30%	43%	7%	19%
Nebraska	122,694	20%	24%	20%	36%
North Dakota	42,072	26%	35%	20%	19%
Oklahoma	145,640	25%	27%	15%	32%
South Dakota	60,289	22%	20%	11%	47%
Wyoming	21,326	17%	29%	49%	5%
Total	1,375,739	16%	36%	22%	26%

Table 1: Total 4-H youth populations of states in the Wonderwise 4-H network by size of their place of residence and overall. Illustrates the diverse population densities within the partner states.

This evaluation is designed to describe, summarize, and assess the dissemination of the Wonderwise 4-H project to 4-H leaders and staff. This project involved 4-H organizations in 10 states that partnered with the University of Nebraska State Museum in providing Wonderwise Women in Science learning kits and workshops for 4-H faculty, staff, and volunteers. From the first contact with the 4-H State Leaders in each potentially participating state to the dissemination of kits and scheduling of workshops, the dissemination of this project was a complex process.

The purpose of this report is:

- to provide a record of the dissemination process for the Principal Investigators of the Wonderwise 4-H project;
- to provide documentation of the different strategies used by the diverse states and an analysis of effectiveness for the partner states' 4-H leaders and staff;
- to provide evaluative information about the strengths and weaknesses about the dissemination to the funding sponsor, NSF; and
- to develop recommendations about dissemination of newly developed curricula to a national audience of informal educators.

This report includes the following sections: a description of the dissemination plan, a description of the evaluation plan, an explanation of limitations of this report, a detailed results section with summaries of each phase of the dissemination and an interpretation of findings, and conclusions and recommendations.

Focus of the Evaluation: Dissemination Plan

Description of the Dissemination Plan of Wonderwise 4-H

The dissemination process was an integral and key aspect of the Wonderwise 4-H project. The plan for dissemination had several distinct phases, beginning with the initial recruitment of state partners and ending with the widespread use of Wonderwise within each participating state's 4-H program. These five phases, or steps in the dissemination process, were planned as follows:

1. *Recruiting and organizing state 4-H partners.* The project was originally envisioned as a seven state partnership, but as information about Wonderwise 4-H spread, more states expressed interest in the project. This led to the decision to ask states to formally apply to be part of the project.
2. *Piloting and revising original Wonderwise kits.* Because the existing Wonderwise kits had been designed for formal classroom use, certain features and aspects of the kits were not a very good fit for the 4-H users. Asking the partner state participants to pilot the existing kits was designed to serve two important purposes: to introduce the state 4-H partners to the Wonderwise kits through their actual use and 2) to provide crucial feedback to the project

about needed changes to make the kits more user-friendly and appropriate to this new audience. It was anticipated that the feedback would then be compiled and used not only to revise the existing kits, but also to guide the development of the new kits to be consistent with the revised format.

3. *Using workshops to introduce the Wonderwise 4-H Kits.* The third phase focused on conducting a series of workshops with informal educators to educate them about the Wonderwise kits and encourage their use. Staff time was allocated to provide six hours of workshops within each of the partner states. The people who attended the initial workshops led by a Wonderwise 4-H facilitator were expected to conduct additional workshops to introduce more people within their state to the kits.
4. *Utilizing grant resources.* Each state was allocated \$10,000 to purchase kits and supplies, so this phase involved each state deciding how to use these grant resources. They decided when and which Wonderwise kits and supplies to purchase, and determined how to distribute kits and supplies within their state.
5. *Using Wonderwise within each state 4-H program.* The ultimate goal of the dissemination plan was the widespread use of Wonderwise and continued training opportunities led by local staff within each participating state's 4-H program.

This report will examine each phase of the process, the extent to which the project conformed to the plan and how it evolved over time. In particular, it will describe the progress of individual states through the process and the different dissemination strategies utilized by the partner states.

Evaluation Questions

The primary questions guiding this evaluation were:

1. *How did the context of the individual states impact the dissemination process?*
2. *What were the strengths and weaknesses of the dissemination plan and process?*
3. *To what extent did the project dissemination meet its goals?*

To answer these questions about the process of the dissemination, several sources of data were required. These included: the dates and agendas of meetings; the dates, places,

participation and descriptions of the Wonderwise 4-H workshops; detailed information from the project co-directors about the process and its evolution; specific information from each participating state 4-H contact person about the context and activities in their state, and reported uses of Wonderwise 4-H within each state.

Evaluation Plan and Procedures

Basic quantitative data describing the dissemination of Wonderwise 4-H was gathered in three ways: (1) through the on-going collection of demographic information regarding Wonderwise 4-H workshops, (2) through the on-going collection of demographic information regarding the use of the curriculum with youth in each of the partner states and (3) through the monitoring of how grant resources were used by each state to purchase kits and supplies. All Wonderwise users were asked to voluntarily complete a one-page demographic report describing each use of the Wonderwise kits. The report describes which kits were used; the date; the setting; and the age, ethnicity and gender of youth and adults who used the kit. Demographic reporting forms were distributed at the workshops introducing Wonderwise Women in Science and available from the Wonderwise web site. The monitoring of how grant resources were used was done by GPN, the distributor who handled all kit orders, and reports of monies spent were sent to the evaluator on a periodic basis.

Qualitative data about dissemination was gathered both about the workshops and about individual state dissemination progress. To supplement the demographic information gathered at the Wonderwise 4-H workshops, a qualitative summary of each workshop was gathered from the Wonderwise Workshop leader. This included a description of the site and participants as well as her impressions of the workshop, any specific challenges encountered and highlights of the experiences. To gain a better understanding of how Wonderwise 4-H was being used in each of the partner states, the basic information about workshops and other uses was supplemented through telephone interviews with each of the state contacts.

Ten telephone interviews were conducted between February 26, 2002 and May 1, 2002. The interviews ranged from 17 to 45 minutes in length depending on the activity level within each state. Each state contact was asked a series of eight questions about Wonderwise 4-H and how it was being used and received within their state (see appendix for interview guide). The interviewer transcribed their responses as the interview was conducted via phone. Immediately

following each interview the written notes were reviewed and details were expanded to complete the transcription.

In May, 2002, all the transcriptions were summarized. It was clear that in most of the states, much of the activity involving Wonderwise was planned for the upcoming summer months. Four of the ten states had not yet conducted a workshop for their staff. This led to the decision to continue gathering data regarding the activities in each state through informal conversations with state contacts in the summer and fall of 2002. Beginning in November, 2002, follow-up interviews were conducted with some of the state contacts.

The second set of seven follow-up interviews took place between November 4, 2002 and February 21, 2003. The follow-up interviews were more open-ended than the first set. The state contacts who were not able to provide a complete picture of the dissemination in the first interview, were asked for an update on what had happened since the first interview, including their state training, and then asked for specific details about the dissemination within their state. This report summarizes the findings from the interviews with the state contacts, the demographic information and purchases of curriculum. All quotations from state contacts are taken from the transcriptions of the phone interviews.

Limitations

Because of the way the data was gathered for this report and the individual timelines within the different states, there were often large gaps in time between interviews. In other words, the information gathered for this report occurred over the three year period of the grant. In addition, because states completed the dissemination at different rates, interviews with states did not occur at the same time in each of their dissemination processes. This may have resulted in some uneven reporting in two ways. First, depending on when the data was gathered, some information and events were more salient during the interviews. For example, if a state had just recently completed a workshop or encountered some difficulties in working with staff, information about that was discussed at more length. Second, contact with the states may have actually spurred additional activity. When states were contacted for the interview, it provided a significant interaction with Wonderwise staff, and may have moved the project back to a more active status in those states that had placed it on the back burner.

All the qualitative information about dissemination within states was gathered from state contacts directly via phone. All quantitative information regarding uses of the Wonderwise 4-H kits within the partner states was gathered from demographic forms that were voluntarily completed. The 4-H staff and volunteers within the states were not consistent in submitting forms, therefore picture of activity overall and within individual states is incomplete. No observations were conducted in conjunction with these interviews, and there was no follow-up with any other staff. While different types of documentation supplemented this information, the interpretation about why things worked well or details about strategies used relied heavily on self-reports from the state contacts. This does provide direct data but limits the interpretation to each state contact's own view of what occurred.

Results

Because each phase of the dissemination had its own distinct issues and results, especially across the different states, the findings from each phase of the dissemination process will be discussed and then immediately followed by the interpretation of these findings. This will help with understanding each phase within the context of the entire process.

1. Recruiting and organizing state 4-H partners

a. Summary

The first phase of Wonderwise 4-H began in the June of 2000 when representatives from seven interested states were invited to a project directors meeting that introduced the project. Following this meeting, one of the co-PIs on the project presented state program leaders with information about the project informally and at the North Central 4-H Leaders Forum held in Kansas City in July, 2000. He commented, "They were very enthusiastic about it and went back to their states and found someone to do it. We ended up with some more states because of that." This was followed by a second organizational meeting in October, 2000 with eleven states attending. At this meeting, the overall organization of the project and procedures for piloting the original kits were discussed.

Following the October, 2000 meeting, the co-directors of the project decided to formalize the state's agreement to participate to ensure that each state was committed to the process and to clarify the requirements of participating. The 4-H state program leaders of the participating

states were asked to submit an application in which they agreed to participate in all phases of the project, to participate in the project evaluation and to make presentations at regional or national conferences. The decision to participate was made within the 4-H organizational structure at the state level in each state that applied, and every state designated a state contact for the project. Direct person to person contact was often cited as an important part of the decision to participate, as one state contact said, “I liked the project and it was one of those things where I could collaborate with people I knew.” Ten of the eleven states with representatives at the October 2000 meeting applied to participate in Wonderwise 4-H.

Each partner state designated a contact person for their state whose role was to create and sustain a Wonderwise 4-H network. The contacts identified by the states were a diverse group and illustrated how different the statewide 4-H structures were within each state. Some of the state contacts were 4-H State Program Leaders who had an administrative role in their state. Others were 4-H Youth Development Specialists or Project Specialists who work with staff and volunteers on a state-wide level. One was a Youth Initiative Specialist who worked with staff and teacher training in a program focused on science education, and one was a County Extension Educator who worked directly with youth. For all the state contacts, their role within the Wonderwise 4-H project was organization, communication, training and dissemination of the project within their state. This role required that they be an advocate for science education, a cheerleader, an organizer and a trainer for informal and in some cases formal educators in the use of Wonderwise 4-H. To fulfill this role, they needed to be familiar with the project and the needs and resources of their own state.

The commitment of the state contact and the amount of time they had available to dedicate to the project varied widely across the partner states, and even over time within an individual state as other projects came and went. The state contact for Illinois explained that the two elements that created strong support of Wonderwise within his state were administrative support and staff with enough time to dedicate to the project. “She [Illinois State Program Leader] was fully supportive of the program, but knew the existing state staff had more on their plates than they could handle and if Illinois was going to participate, she needed someone else to do that [be the state contact].” In Montana, the loss of the initial state contact had an impact on the momentum of the project and led to a two-year period with no reported activity. “We

assigned that county agent the leadership of the Wonderwise project and she went to the training, but then she left us and we had a little bit of a hole.”

Each state was given a great deal of latitude in how the project was organized and disseminated within the state. Within Illinois, a system was set up that utilized the extension regions within the state and included educators working in different parts of the 4-H system. The state contact explains this process, “I established a state-wide task force with one representative from each of our five extension regions. First I shared and presented the information at a State-wide Youth Development Team meeting in November 2000 and asked for volunteers to pilot one of the six kits and had takers on every one of them. From that core group of individuals, I was able to establish our state-wide task force. That group is made up of five extension educators, some are center based (work with multiple counties) and some are unit based (work with one or two counties). That mix of center based and unit based staff provide leadership for Wonderwise in Illinois.” Montana, however, took a much more self-directed role by allowing individual agents to decide if they wanted to participate in the first stages of the project. “We sent out information about the project and let agents self-select to come to our day and a half training and those agents were the ones who helped with that pilot project.”

b. Interpretation of findings

Personal connections and individual commitment appeared to be the most important elements contributing to the success or problems of the project in this early stage. Personal relationships helped establish an atmosphere of trust and provided a basis for communication. Initially, there was a lot of contact between the states and Wonderwise 4-H staff, with the formal meetings and the application process. The personal aspect of the relationships that many state contacts developed with the Wonderwise PIs and staff made structured communication strategies seem unnecessary initially. However, the lack of a formal structure of communication, which seemed superfluous at first, may have contributed to the communication issues that were to arise later in the project.

The level of commitment of the state contacts varied from state to state in part because of how the state contact was designated. This key person, whose role was to establish an organizational network and identify the needs within their own state, really determined the

success or failure of the initial dissemination phase. When the person selected as state contact personally advocated for their state to participate in the project, they were more likely to provide enthusiastic leadership, whereas those who were assigned the task by a superior may or may not have embraced the project and given it priority. The amount of time the state contacts had available for the project also varied. Changes in responsibilities, or loss of a key person, such as in Montana, had a lasting impact on the project.

However, the flexibility built into the process allowed the project to work within the existing structure of each state. For many state contacts, being able to blend Wonderwise 4-H with other projects they were working on allowed them to have more time for Wonderwise and thus contributed to the overall success of the project.

2. Piloting and revising original Wonderwise kits

a. Summary

The 1st edition of the Wonderwise Women in Science kits were initially developed for classroom use in a school setting. One goal of the current Wonderwise 4-H project was to modify the kits for use in informal settings, specifically 4-H settings, and to make the format of the kits more accessible and usable to this new audience. Consequently, the second phase of the project involved extensive piloting of the original kits by extension educators in the partner states. The piloting phase took place from January, 2001 to May 2001. The original kits were to be piloted by the 4-H informal audiences and their recommendations sent to the Wonderwise 4-H development team for use in the revision of the kits.

Five of the partner states had 4-H educators who actively participated in the piloting stage and gave feedback to the Wonderwise staff about how Wonderwise should be adapted to be more appropriate for informal use. The 4-H educators recommended that to accommodate the needs of informal education, several changes needed to be made. These are listed in Table 2 below, along with the changes that were ultimately incorporated into the revised kits.

Feedback from Piloting by 4-H Educators and Resulting Changes to Kits

Areas identified as needing change	Change incorporated into revised kits
Activities took too long to complete.	The length of time needed for each activity was reduced, or activities were broken into sections that could be completed separately if needed.
Preparation for some activities was too extensive or difficult.	A "For Leaders" page was added to make preparation easier.
Some supplies were hard to obtain.	Difficult to find supplies were eliminated.
It was difficult to assess how much students had learned. In addition, the blueprint of the 4-H experiential learning model also includes analyzing and reflecting on the activities and connecting it with real life.	Learning outcomes were clearly stated in each kit's table of contents. Reflection questions, called "Think It Over" were added at the end of each activity and overall assessment questions, called "Putting It All Together" were added to each kit.
Leaders wanted a way to connect Wonderwise with a longer-term activity, such as a fair project.	Project ideas called "New Wonders" were added to each kit.

Table 2: Summarizes the recommendations of 4-H staff who piloted the Wonderwise kits and changes that were incorporated into the revised and new kits produced as part of the Wonderwise 4-H project.

Once this feedback was incorporated and the original kits revised, the 2nd edition kits were to be made available to the partner states. These initial kits were revised on schedule and the new editions became available in November 2001. However, the 4-H leaders in the states that were not yet running workshops or buying new kits continued to use the pilot versions throughout the first year and beyond. Project management had assumed that the 4-H staff in the partner states, in particular the state contacts, would check in when it was time for new kits to be available, download the new kits and replace their curriculum guides with the new ones. Five states that conducted workshops within the next six months bought the new kits and began using the revised versions. However, the other states continued to use the outdated versions of the kits. Some of these state contacts did not even know the revised kits were available, in spite of their participation in the piloting.

In April, 2002, the North Dakota 4-H contact said, "I feel the curriculum is more appropriate for school based activities, in my opinion, because of the way it is set up." He had not yet seen the revised kits. In February, 2003, after North Dakota had purchased the new kits and North Dakota 4-H staff had participated in a workshop, they made plans to use activities from the Vet Detective kit as part of National Reading Month, to use Urban Ecologist as part of a week long teacher in-service on watershed education, and to use several of the kits as part of a series of one day activities for youth. This suggests that if the revised kits had been introduced

when they were available in November 2001, the dissemination in North Dakota might have been more widespread earlier.

Many states, after piloting the kits, wanted to start disseminating the kits throughout their state right away, without waiting for the revisions. Although it was not anticipated that there would be any workshops prior to May 2001, two states went ahead with workshops using the original kits. Two more states ran workshops in the summer of 2001 using unrevised kits, creating a wider web of dissemination of the original kits.

Even after piloting and revising the kits, the interaction between Wonderwise and traditional 4-H remained uneven. While many 4-H Wonderwise users felt it was a perfect fit with traditional 4-H, others had some difficulties incorporating Wonderwise into traditional 4-H activities. The Wonderwise 4-H state contact for Oklahoma describes how the original version of the kits was more convenient than the revised edition, “Personally I liked it better when everything was self-contained in a box. I think we will have trouble keeping stuff together because it’s not all together in one package. I’m trying to get little plastic boxes from Wal-mart and get the stuff together. It is very time consuming and nobody can do it except me.” This state contact dedicated a large amount of time to gathering supplies and putting together self-contained kits to use in Oklahoma.

For others, however, the kits made a perfect fit just as they were, “It [Wonderwise 4-H] is excellent in a number of ways. One is that it is intended for use with the age group that corresponds with our largest enrollment. The bulk of them are 10-14 and that’s basically the group Wonderwise is designed for,” from the state contact for Wyoming. Wyoming has incorporated Wonderwise into after-school programs, outreach programs and the summer residential camp organized by some counties.

b. Interpretation of findings

Piloting the original kits was successful in identifying needs unique to 4-H audiences. The revised kits addressed the concerns identified in piloting and were very usable by 4-H audiences. The format defined through the piloting process was used to organize the three new kits developed as part of the Wonderwise 4-H project.

The primary lesson learned from this phase is the importance of on-going communication. Each participant in piloting and all the state contacts should have been formally informed when the 2nd edition kits became available. Particularly with the number of workshops

that were run using the unrevised kits, it became all the more important to inform everyone about the availability of the revised kits. The teacher's guides for all the kits were easily available to be downloaded from the Wonderwise web site. Some misconceptions about the project could have been avoided if the revised version of the kits had been widely distributed as soon as possible.

3. Using workshops to introduce the Wonderwise 4-H Kits

a. Summary

The third phase of the dissemination process was introducing the Wonderwise Women in Science learning series to the 4-H staff and volunteers in the partner states. Because of previous success with workshops in the earlier phases of Wonderwise, the primary method planned for getting individuals involved in using Wonderwise 4-H was through a variety of workshops on the kits. Each partner state was given the opportunity to host two workshops, led by an experienced Wonderwise Workshop Leader who was an education facilitator on staff at the University of Nebraska State Museum, for their staff and volunteers. A great deal of flexibility was planned into the process. Each state was encouraged to schedule workshops directly with the Workshop Leader and given great freedom in determining the length of the workshop, which kits would be covered and who would be invited to attend. Following the workshop, some of the 4-H staff who had been introduced to the Wonderwise kits were expected to provide local workshops within their state and present the project at regional and national conferences.

Between June 1, 2000 and May 31, 2003, 603 people attended the 34 workshops introducing Wonderwise in each of the partner states, and continuing to disseminate Wonderwise within Nebraska. The Wonderwise Workshop Leader led all the workshops, which are summarized in Table 3. Each workshop was designed around the needs and circumstances of the state requesting the workshop. Because scheduling was done at the local level, the workshops vary in length and timing. Due to local conflicts, North Dakota and Montana were not able to schedule any workshops until the third year of the grant, while other states, like Nebraska and Oklahoma, scheduled several workshops within their state. Illinois originally planned to host two workshops within their state but later decided to only provide one workshop due to costs of hosting a workshop. Supplies and expenses related to the time and travel of the Workshop

Leader were covered by the grant, but all other costs such as renting a site and the time of staff attending, were to be paid on the local or state level.

Wonderwise 4-H Workshops led by the Wonderwise Workshop Leader

Date	Location	Attendance	Length
6/6/00	UNSM Lincoln, NE (LPS Multicultural Leadership Institute)	9	1 day
6/15/00	UNSM Lincoln, NE	15	2 day
8/22/00	County 4-H Office Lincoln, NE	5	1 day
2/12/01	Statewide Training Pre-session Great Falls, MT	14	2 day
2/14/01	University of Wyoming Laramie, WY	21	2 day
4/16/01	Science Methods Course, UNL, Lincoln, NE	14	1 day
4/20/01	County 4-H Office Lincoln, NE	21	1 day
5/3/01	Life Long Learning Center Norfolk, NE	10	1 day
5/8/01	Panhandle Research & Extension Center Scottsbluff, NE	16	1 day
5/9/01	NPPD Building North Platte, NE	17	1 day
5/10/01	College Park, Grand Island, NE	12	1 day
6/6/01	Morrill Hall for LPS Teachers, Lincoln, NE	16	2 day
6/8/01	Morrill Hall for LPS Teachers, Lincoln, NE	11	1 day
11/13/01	Hotel Conference Area Champaign, IL	32	2 day
1/14/02	County Extension Office Oklahoma City, OK	24	2 day
2/12/02	4-H Education and Natural Resource Center Madrid, IA	38	2 day
3/11/02	4-H Fairgrounds, Kearney, NE	21	1 day
3/14/02	East Campus Union Lincoln, NE	21	1 day
4/11/02	Extension Office Farmington, MN	26	1 day (12 hour)
5/15/02	Extension Office Jackson Hole, WY	18	2 day
10/9/02	Extension Office Sturgis, SD	9	1 day
10/11/02	Hotel Conference Center Mitchell, SD	13	1 day
11/13/02	4-H Youth Development Conference St. Cloud, MN	25	1 day
11/20/02	4-H Leadership Training Center Tustin, MI	16	3 day
1/6/03	County Extension Office Billings, MT	6	2 day
1/8/03	Church Glasgow, MT	12	2 day
1/9/03	County Extension Office Great Falls, MT	11	2 day
1/14/03	County Extension Office Missoula, MT	6	2 day
1/21/03	Knights of Columbus Hall Dickinson, ND	20	1 day
1/22/03	Extension Research Center Carrington, ND	16	2 day
2/5/03	4-H Camp Gretna, NE	22	1 day
2/20/03	UNL Science Methods Course Lincoln, NE	50	1 day
4/22/03	County Fairgrounds Watonga, OK	16	1 day
4/24/03	Church Okemah, OK	20	1 day
Total			
Participants	34 Workshops Total	603	

Table 3: Summarizes the Wonderwise 4-H workshops conducted by the Wonderwise Workshop Leader between 6/1/00 and 5/31/03. Workshops described as one day were 6-12 hours in length, two day workshops were 12-20 hours long and required participants to stay over one night, three day workshops were 20-30 hours long and required participants to stay over two nights.

Unfortunately, because of the high level of flexibility, it was often difficult to communicate clearly with each state regarding their responsibilities and options in organizing and facilitating the workshops. Each state had the responsibility of providing a space for the workshop and supplies for the workshop, however, when the staff organizing the workshop were not familiar with the kits, they were not always effective at gathering the supplies needed. Prior to several of the workshops, the facilitator found herself making last minute photocopies or looking for grocery stores to purchase supplies such as flour or licorice needed for the activities. Nonetheless, feedback on the workshops, from both participants and state contacts, has been enthusiastic and positive.

In many of the partner states, distance presented a challenge in getting people introduced to Wonderwise. The grant funds that were available to the states could not be used to cover travel expenses. In some of the large states, this became an issue. Several states solved the distance problem by having workshops at different locations across the state. The state contact and workshop facilitator traveled so that local staff could attend a workshop closer to their home. This strategy was particularly effective in Montana. In Nebraska, running a workshop via satellite was an innovative solution to the distance challenge. The state contact for Nebraska and co-PI for the Wonderwise 4-H project explained, “We’ve done two face-to-face trainings already to get more in-depth. We did that satellite broadcast to get those people who won’t come to a face-to-face meeting. We’ve done the volunteer forums the last two years and we’ve done Wonderwise there. And the [state] fair would be another one that exposed a lot of people to it.”

The Wonderwise workshops were a way to help 4-H staff and volunteers to become familiar and comfortable with using the kits. Face-to-face and hands-on experience provided an engaging introduction to the kits that written materials could not convey. The state contact for North Dakota stressed the importance of the workshops in this type of hands-on curriculum. “I think it is a system that requires training. Otherwise it is just a box that sits on the shelf. I don’t think people will really use it if they haven’t been through a training.”

In addition, kits were often made available as part of the workshop, so people could take them home and use them as soon as possible. The Oklahoma state contact directly linked the workshop participation with the kit distribution, saying, “We put together a training and implementation team, primarily people who attended the training or helped pilot the kits. Each person who attended training or is on the team gets \$60 to choose a kit initially to be stored and

used in their county. Then we are also putting two sets of everything in each of the four districts for checkout. The people who did training in January 2002, once they have used and reported on a kit, then they get to use a lesser dollar amount, \$45, to purchase another kit. [The response] has been very enthusiastic. At least one or two people have gotten grants for purchasing additional materials. People who have or have not attended training can also check kits out. But to have it in their counties, it gets used more often.” Wyoming and Michigan used similar strategies of getting kit directly in the hands of people who attended the workshops. Other states, like Iowa and Illinois distributed kits geographically throughout their state. Kits were made available to all staff in the state from county or regional centers, regardless of whether they had attended a workshop or not.

In Minnesota the workshops were important in getting kits out for use on the local level through a check-out system that made a few copies of the kits available to people who had attended workshops. The state contact for Minnesota explains, “From the first two trainings that we did, we basically set up a kit rental system where the kits went out about a dozen times and during that time, it was through the people who had been trained. People used kits primarily in 4-H day camps. A couple of people used them for lock-ins, where we have the kids for 24 hours. They’re still being used and I suspect they will be used a lot more now that we are going to set up regional training.”

The workshop model anticipated that people trained at the state-wide workshops by the Wonderwise Workshop Leader would then conduct additional workshops introducing Wonderwise 4-H to staff and volunteers across their state. This second level of locally-led workshops have been reported as an important element in the dissemination process by nine of the ten partner states. North Dakota is the only state that has not utilized this strategy. Overall 48 local workshops, including those within Nebraska that were led by Wonderwise teachers who were involved in the project prior to 4-H revisions, have been reported using demographic forms. These workshops are summarized in Table 4. Local workshops have introduced Wonderwise 4-H to an additional 1056 people, approximately half of whom were specifically 4-H leaders and volunteers.

Wonderwise 4-H Workshops conducted by Nebraska and Partner States

Date	Location	Attendance	Trainer
6/22/00	Teacher Inservice Kearney, NE	15	Tricia Buchanan
7/6/00	ESU #7 Teacher Inservice Columbus, NE	9	Barbara Hart
7/13/2000	Teacher Inservice Kearney, NE	27	Tricia Buchanan
8/22/00	4-H Leader Training for State Fair Lincoln, NE	5	Gary Heusel
10/18/00	Preservice Workshop Lincoln, NE	25	Caryn Silcock
11/12/00	Teacher Inservice Farwell, NE	12	Tricia Buchanan
11/15/00	Preservice and Inservice Workshop Hastings College	18	Barbara Sunderman
12/11/00	ESU #14 Teacher Inservice Sydney, NE	5	Carma Weisbrook
1/14/01	Montana 4-H Adult Volunteer Training Missoula, MT	7	Pat Murphy
1/18/01	Preservice and Inservice Workshop Hastings College	14	Barbara Sunderman
1/31/01	Norfolk Public Schools Teacher Inservice Norfolk, NE	22	Linda Engel
2/3/01	4-H Leader Forum North Platte, NE	30	Bill Caldwell
2/13/01	Preservice Workshop Hastings College	12	Barbara Sunderman
2/16/01	Wonderwise 4-H Satellite workshop Lincoln, NE	100	Gary Heusel
2/19/01	ESU #4 Teacher Inservice Falls City, NE	12	Roger Lampe
3/5/01	Montana 4-H Adult Volunteer Training Missoula, MT	13	Pat Murphy
3/8/01	Youth and U St. Paul, MN	40	Stephen Carlson
3/15/01	Extension Training St. Paul, MN	20	Stephen Carlson
3/30/01	4-H Leader Forum Columbus, NE	27	Bill Caldwell
4/5/01	Preservice and Inservice Workshop Hastings College	14	Barbara Sunderman
4/24/01	Preservice Workshop Hastings College	13	Barbara Sunderman
4/26/01	Preservice Workshop Hastings College	13	Barbara Sunderman
6/4/01	Dawson County 4-H Camp Presentation Cozad, NE	39	Andrea Nisley
9/26/01	ISU Extension Afterschool Presentation Sac City, IA	10	Susan Doehrman
10/17/01	South Dakota Share Fair Brookings, SD	60	Marilyn Rasmussen
11/10/01	North Central Iowa 4-H Training Des Moines, IA	40	Bill Caldwell
1/10/02	Iowa State Univ. Ext. In-Service Des Moines, IA	23	Steve Truby
1/9/02- 1/11/02	WA State University 4-H Faculty Training Seattle, WA	72	Gary Heusel
2/15/02	State Leader's Forum Grand Island, NE	23	Bill Caldwell
3/11/02	Teacher In-service Charles City, IA	21	Steve Truby
3/12/02	Teacher In-service Storm Lake, IA	21	Steve Truby
5/18/02	Camp Staff Training, Gretna, NE	12	Kelly Krambeck
5/22/02	Camp Clover Daycamp Training Springfield, IL	12	Deanna Franklin
6/11/02	Teacher Institute Carlonville, IL	12	Deanna Franklin
6/15/02	Training Grand Island, NE	26	Stephanie Oswald
7/20/02	Volunteer Training Stillwater, OK	38	Billie Chambers
9/19/02	Leadership Trust Inservice Chevy Chase, MD	18	Gary Heusel
9/23/02	Volunteer Club Leader Training Waterloo, IA	19	Mary Tewinkel
9/30/02	Volunteer Club Leader Training Grundy Center, IA	12	Mary Tewinkel
10/20/02	Innovation Center Preservice Training Norfolk, NE	34	Gary Heusel
11/15/02	Volunteer Club Leader Training Tripoli, IA	23	Mary Tewinkel
1/21/03	Training Boone, IA	22	Annette Brown
1/24/03	Afterschool Leaders Spearfish, SD	13	Sarah Weese
1/24/03	SDSU Cooperative Extension Inservice Rapid City, SD	12	LaDonna McKnight
1/27/03	Leader's Meeting Jefferson, IA	6	Nancy Wiedmann
2/1/03	Leader Training Missoula, MT	20	Denise Arnold
3/20/03	Council Training Concord, NE	8	Sandy Preston

4/8/03	CES Youth Professionals Training Sundance, WY	7	Gene Gade
Total Participants	48 Workshops Total	1056	

Table 4: Summarizes the shorter Wonderwise 4-H workshops that were conducted by local staff and other Nebraska Wonderwise teachers between June 1, 2000 and May 31, 2003. These workshops tended to be less in-depth than the workshops conducted by the Wonderwise Education Facilitator and were typically 2-6 hours in length.

While Michigan has not submitted demographic forms reporting any local workshops, the state contact described in the interview how they have been an important element of the distribution process within her state. “When we do training, we lay out that kit and go through various pieces and parts and then let participants try one they like. Typically, I won’t leave a program with any kits because they want to take them home and use them and I have a sign-up for kits for the next five months. They like the video, CD-ROM and hands-on activities. They [Wonderwise kits] are not intimidating.” In Michigan, local workshops were used to introduce the kits, demonstrate their use, and begin the dissemination process.

One unforeseen issue that some of the partner states had to deal with during this workshop phase was staff and budget reductions. Reductions impacted all of the states to a greater or lesser degree. Iowa and Illinois had very little impact, but the state contacts anticipate that there are reductions on the horizon that may impact the future of the project. Minnesota had one of the most severe impacts because they had invested in early training of their staff and then suffered a large-scale reduction and lost many of the staff who had been trained in using Wonderwise. After the first workshop held in Minnesota in April, 2002, the state had 100 positions eliminated due to budget reductions. By the time of their second state-wide workshop in November, 2002, many of the people trained in April had left.

Losing staff who are familiar with the project combined with the increased workload on the remaining staff, reduced the level of use of the project within states hit hardest by the economic slow down. In Michigan, 60% of the 4-H budget comes from the state. With an anticipated state budget shortfall of 1.7 billion dollars, there has been quite an impact. The Michigan state contact explained, “We cannot do the training we had planned for this Spring because people are not traveling. But on the local level, staff are bringing resources from many sources together to provide programming.” Because Wonderwise 4-H was able to integrate with existing programs and requires less preparation time than some other curriculums, she doesn’t believe the budget problems are impacting use on the local level, but they are definitely restricting the time and money staff have available to attend workshops.

In addition to state-wide and local workshops, each partner state was expected to present Wonderwise 4-H at two regional or national conferences. It was anticipated that state contacts or other state staff in partner states would make conference presentations on their own, without University of Nebraska State Museum support staff. Conference and other presentations of Wonderwise for local, regional or national audiences are summarized in Table 5. There were not as many regional or national conference presentations by 4-H staff as expected. The goal was for each partner state to make at least two regional or national presentations. Though some of the partner states, Nebraska, Wyoming and Illinois, were very active in this venue, two of the ten states involved did not participate in any conference presentations.

Conferences and Other Presentations of Wonderwise 4-H

Partner State	Conference and Location	Presenter	Date	Attendance
Nebraska	North Central Leaders Forum	State Contact and co-PI	7/18/00	25
Nebraska	Wonderwise 4-H Planning Conference San Rafael, CA	State Contact and co-PI	8/14/00	5
UNSM	SACNAS National Conference Atlanta, GA	Wonderwise Workshop Leader	10/13/00	28
UNSM	ASTC Conference Cleveland, OH	Wonderwise Workshop Leader	10/15/00	110
Nebraska	Nebraska Association of Teachers of Science, Fremont, NE	Wonderwise Workshop Leader	10/27/00	5
Nebraska	Evaluation Planning Conference, Lincoln, NE	Co-PI's	11/9/00	11
UNSM	ASTC conference: Educators Showcase Phoenix, AZ	Wonderwise Workshop Leader	1/7/01	105
UNSM	ASTC conference: Successful Collaborations Phoenix, AZ	Wonderwise Workshop Leader	1/7/01	26
Wyoming	4-H Western Regional Sheridan, WY	State Contact	3/15/01 – 3/17/01	38
UNSM	Lincoln Public Schools Science Fair	Wonderwise Workshop Leader	3/20/01	450
UNSM	Planning Conference	State Contact and co-PI	6/7/01-6/8/01	10
Nebraska	National 4-H conference	State Contact and co-PI	7/18/01	225
Nebraska	4-H Discovery Center at State Fair Lincoln, NE	Wonderwise Workshop Leader State 4-H staff	8/26/01	33
Nebraska	NE 4-H Cyberfair at State Fair Lincoln, NE	Wonderwise Workshop Leader State 4-H staff	8/24/2001-8/29/2001	748
Nebraska	NE 4-H Cyberfair at State Fair Lincoln, NE	Wonderwise Workshop Leader State 4-H staff	8/30/2001-8/31/2001	82
UNSM	SACNAS conference Phoenix, AZ	Wonderwise Workshop Leader	9/28/01-9/29/01	40
Nebraska	Midwest Regional Middle Level Conference Omaha, NE	Wonderwise Mentor Teacher	10/5/01	38
UNSM	ASTC conference: Successful Collaborations Phoenix, AZ	Wonderwise Workshop Leader	10/7/01	26
UNSM	ASTC conference: Educators Showcase Phoenix, AZ	Wonderwise Workshop Leader	10/9/01	105
South Dakota	South Dakota Share Fair Brookings, SD	State Contact	10/17/01	60
UNSM Illinois Nebraska Oklahoma	National Extension 4-H Agents Bismark, ND	Wonderwise Workshop Leader State Contact State Contact and co-PI State Contact	10/25/01	44
UNSM	NATS: Educator showcase Fremont, NE	Wonderwise Workshop Leader	10/26/01	125
Nebraska	Washington State 4-H Faculty Seattle, WA	State Contact and co-PI	1/9/02-1/11/02	37

Nebraska	UNL Science Methods Course Presentation Lincoln, NE	Wonderwise Mentor Teacher	2/5/02	46
Nebraska	UNL Science Methods Course Presentation Lincoln, NE	Wonderwise Workshop Leader	2/12/02	21
Nebraska	State Leader's Forum Grand Island, NE	State 4-H staff	2/15/02	23
Wyoming	Wyoming State Leader's Forum Evanston, WY	State 4-H staff	3/15/02	198
Minnesota	Minnesota 4-H Adult Volunteer Assoc. Brainerd, MN	State Contact	4/12/02- 4/13/02	90
UNSM Iowa	CYFAR New Orleans, LA	Wonderwise Workshop Leader State Contact	5/28/02	12
UNSM Wyoming	CYFAR Share Fair New Orleans, LA	Wonderwise Workshop Leader State Contact	5/29/02	300
Illinois	Community Caring Conference	State 4-H staff	7/15/02	6
UNSM	National 4-H Technology Conference St. Paul, MN	Wonderwise Workshop Leader	7/26/02	33
Nebraska	4-H State Fair Discovery Center Lincoln, NE	Wonderwise Workshop Leader	8/29/02	20
UNSM	SACNAS conference Anaheim, CA	Wonderwise Workshop Leader	9/28/02	48
UNSM	Mountain-Plains Museum Assoc. Topeka, KS	Wonderwise Workshop Leader UNSM staff	10/4/02	40
South Dakota	School Age Care Alliance Conference Mitchell, SD	State Contact	10/12/02	28
UNSM	NATS: Educator showcase Fremont, NE	UNSM staff	10/25/02	150
UNSM	AISES conference Tulsa, OK	Wonderwise Workshop Leader	11/7/02	21
Michigan	National congress Youth Workshop Atlanta, GA	State Contact	12/1/03	150
UNSM	LPS Science Fair	Wonderwise Workshop Leader	3/4/03	133
UNSM	Expanding Your Horizons Conference Crete, NE	Wonderwise Workshop Leader	3/25/03	31
UNSM Iowa	National Science Teachers Association Conference Philadelphia, PA	Wonderwise Workshop Leader State Contact	3/29/03	15
Total Participants	42 Presentations Total			3741

Table 5: Conference and other presentations of Wonderwise 4-H made from June, 2000 through May 31, 2003. Conference and other presentations may be for local, statewide, regional or national audience. Presentations tend to be 1-3 hours in length and provide an introduction to Wonderwise 4-H.

State contacts who chose not to make any conference presentations tended to be less familiar with the project. They were from states that had fewer local workshops in the first two years of the project and had not used Wonderwise as much themselves. One state contact explained that she didn't feel it was her place to take the project to a national conference and felt the staff in Nebraska should do that. She had not considered presenting Wonderwise 4-H at a national conference until she was asked in the follow-up interview if she had done any conference presentations.

b. Interpretation of findings

Overall, the workshops, both by the Wonderwise Workshop Leader and by the partner states' staff were an effective means of disseminating information about the kits and the kits themselves. The state contacts saw the workshops as a critical tool for dissemination and spoke

positively about them. Along with the kit dissemination, the workshops helped “get the word out” on Wonderwise and were an essential component of the dissemination process at the individual state and leader level.

Every state took advantage of the workshops led by the Wonderwise Workshop Leader, though some states scheduled workshops much earlier and some workshops were much more well-attended than others. Together, all the workshops introduced over 1000 people to the Wonderwise 4-H kits. Providing each state with what they needed and wanted in the way of Wonderwise workshops was a challenge. While the flexibility available in adapting workshops to meet local needs was essential, the state contacts often did not have enough information to effectively tailor the workshops to their needs. Lack of clear information or details in the planning process often led to the Wonderwise Workshop Leader rushing to get supplies together at the last minute. Providing a structure, such as a description of training options and list of resources required to do a standard training, would have been a helpful communication tool.

Most partner states fulfilled their obligation for their 4-H staff to conduct workshops and presentations on their own. This extended the dissemination of Wonderwise, and the state contacts reported very positive results using these strategies. However, not all states took these steps. While these obligations were spelled out in the original agreement to participate, it would have been helpful to reiterate the expectations of state participation periodically. Sharing information about the activities, workshops and presentations going on in each state with the other states would have helped emphasize the importance of these activities and encourage every state to participate in them. For the state contacts who were less confident about making conference presentations, more support from the museum and other states could have been made available.

4. Utilizing grant resources

a. Summary

An important component of the grant was the funding each partner state received to spend on the project. The fourth phase of the dissemination process centered around states deciding how to use the funds allocated and when to make purchases. Each state was allocated \$10,000 to purchase kits and supplies. They were encouraged to leverage this funding to obtain additional funding from other sources. The funding was a key element in recruiting states

because it provided the resources to create a successful collaboration by making Wonderwise materials available at the local level. It was also key in disseminating the curriculum to as many users as possible. While each state had local control of how to spend the money allocated to them, it could only be used for purchasing kits and supplies, not for traveling to training or creating promotional materials.

The funds were available for use at any time during the grant period. Individual states decided when they wanted to purchase kits and supplies as well as what to purchase and how it would be used. Illinois was the only state that was successful at finding funds from secondary sources that could be used to purchase kits. They received an additional \$5,000 from outside the Wonderwise project to spend on kits and promotional material. Figure 2 shows how each state spent the funding allocated for kits and supplies. Illinois, Iowa and Nebraska made large purchases of kits as soon as the revised kits were available in November, 2001. Other states, like North Dakota and Montana waited until their state-wide trainings scheduled for early in 2003 to purchase all their kits. For these states who made purchases later, the decision to delay their dissemination was mostly based on the needs of their own state. For various reasons, there was not an earlier date that worked well for training in these states. The advantage for them was that the development of the new kits was nearly complete when they had their training and their staff could begin using all nine kits immediately.

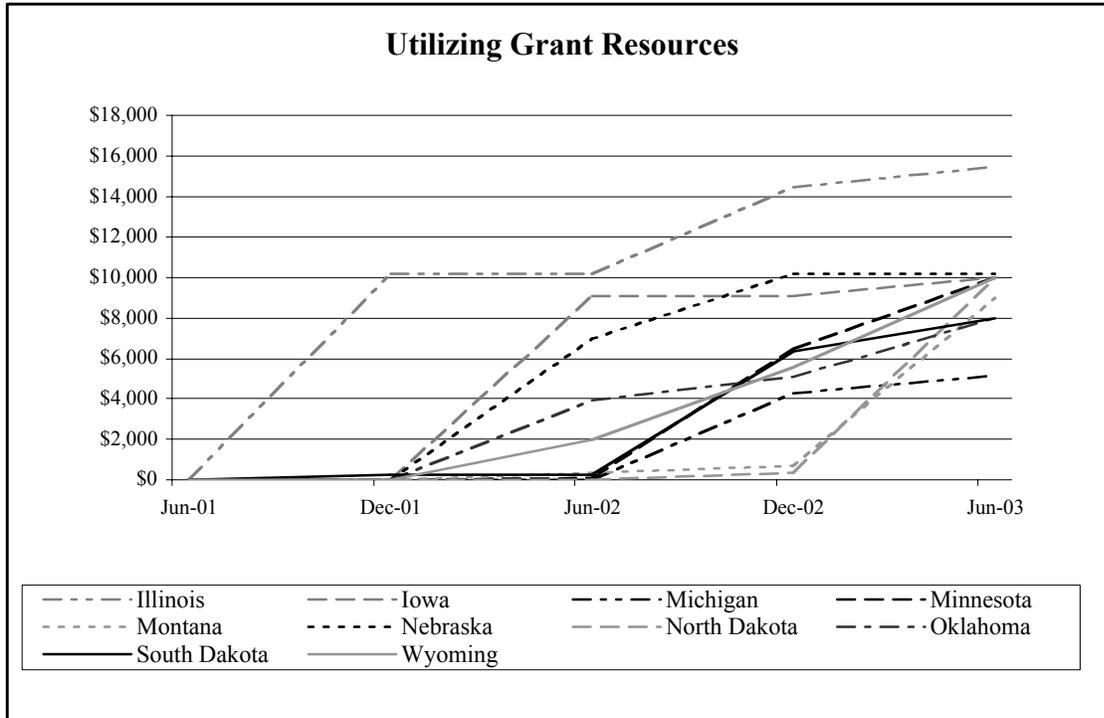


Figure 2: Chart of spending patterns for each of the ten partner states. Each state was provided \$10,000 for purchasing kits and supplies. Decisions about when and how much to spend were made on the local level. The chart indicates how much each state had spent within each six-month reporting period.

In South Dakota, a plan was developed at the state level prior to training. The state contact explained, “We have part of a plan in place. We have 13 field education units made up of 2-8 counties (depending on population and the size of the county) and we plan to order a complete set for each of those units including the extra materials and put those into some kind of container or kit that can be easy to move around so it can be moved from place to place. And then we have two educators located on the Pine Ridge and Rosebud reservations and two more reservations North of Sioux Falls that we work with quite a bit. There has been some interest in the Prairie Detective kit and we plan to order it for those areas. We figure that will get us up to \$7000 and leave a little bit to see how things go. Then after a while we’ll decide what to do with the rest of the money.” As Figure 2 shows, what actually happened in South Dakota followed the plan pretty closely. Prior to the state trainings held in October of 2002, there was one set of kits available in the state. After the training, 111 kits and supplies were purchased to be distributed within the state; one complete set for each field education unit.

In Illinois, the plan was developed in conjunction with the first training. Planning was done at the local level. “We also broke into regions and the task force member from each region

met with staff members within their region to determine the number and distribution of kits that we would order. We have spent our \$10,000 and then some because we also prepared a proposal submitted to our state through youth development team and received an additional \$4800 to utilize with Wonderwise 4-H. So the first \$10,000 we used to purchase as many complete kits of the first six kits as possible, 24-25 complete sets of first kits, and we are using the \$4800 to purchase the additional 3 kits. We've ordered 25 of kits 7-8 and now I need to get a hold of [GPN] to see if we can do a prepayment of that many more of kit 9, because we have to have our dollars spent for first of September. We are also using some of that money to design brochures and banners that can be used at training sites, displays for teacher institutes, and teacher in-service days. We are looking at different ways to market and get the attention of teachers and club leaders to what Wonderwise is all about." The state contact for Illinois helped develop the detailed distribution plan, which included purchasing kits, distributing them and creating publicity for the project. Figure 2 shows that by November of 2001, Illinois had spent the \$10,000 allocated and part of the additional \$5000 in funding from other sources. Illinois now has between 28 and 30 of each of the kits within the state.

As more kits are available for distribution, it makes sense that more kits would be purchased. The first release of kits specifically designed for 4-H audiences was November, 2001 when the second edition of the Wonderwise Women in Science Kits (kits #1-6) were available. The Space Geologist (kit #7) was released in February, 2002. The next kit to be available was Vet Detective (kit #8) in March, 2002. The final kit to be released as part of the Wonderwise 4-H project was Genetic Counselor in February, 2003. Beginning in April, 2003 all of the kits were available in a bilingual version that included a CD-ROM with the activity guide, and video in Spanish and English. How many of each of the kits were purchased is illustrated in Table 6. The most popular kits were Kit #2 Pollen Detective, Kit #7 Space Geologist and Kit #8 Vet Detective. Pollen Detective is about a museum curator who is a botanist. The kit activities focus on botany and geology. Space Geologist is about a NASA scientist that focuses on planetary geology, specifically understanding craters. Vet Detective is about a large animal veterinarian with activities that focus on the medical treatment of elk and bison. The relatively low numbers of Kit #9, Genetic Counselor that have been purchased are not indicative of the popularity of that kit since it has only been available for three months. Overall 1789 kits have been distributed in the partner states.

Total Number of Each Kit Purchased by Partner States

State	Kit 1	Kit 2	Kit 3	Kit 4	Kit 5	Kit 6	Kit 7	Kit 8	Kit 9
Illinois	10	10	10	10	10	10	30	30	26
Iowa	23	25	23	24	23	25	24	24	19
Michigan	12	12	12	12	12	12	12	12	11
Minnesota	26	29	23	29	28	29	26	31	13
Montana	24	23	23	23	23	24	23	23	21
Nebraska	24	33	26	25	26	21	41	49	0
North Dakota	24	24	24	24	24	24	24	24	23
Oklahoma	12	22	12	18	20	20	7	28	10
South Dakota	14	13	13	13	13	14	14	17	0
Wyoming	18	17	19	19	19	19	18	19	17
Total Purchased	187	208	185	197	198	198	219	257	140

Table 6: depicts how many of each kit were purchased by each of the partner states during the grant period from June 2, 2000 through May 31, 2003.

As more kits were distributed and available within a state, it makes sense that there would be more uses of the kits with youth. Table 7 illustrates the pattern of spending and use for all the states. In Nebraska, Oklahoma and Illinois, there is a strong correlation between purchasing kits and using them, but this is not true in all states. This is due to two primary factors. First, some states have not been diligent in reporting back all their uses of the project. Nebraska, Oklahoma and Illinois have reported the largest numbers of uses. Michigan, on the other hand, has not officially reported any use beyond the state training. There is anecdotal reporting by the state contact during her interview of uses of Wonderwise in Michigan by AmeriCorp volunteers in after-school programs and clubs, uses at family days and trainings with child care providers, so we know Wonderwise is being used within the state but without voluntary reporting, it is difficult to estimate how often it is used. The second factor is the impact that one or two people who use Wonderwise repeatedly can have on the overall numbers for the state. This is reflected on Table 7 in the use of Wonderwise in Wyoming where the kits have been widely used in afterschool programs by three individuals who have used several activities from all nine of the kits. This translates into a high number of uses within the state before there were a large number of kits available in Wyoming.

Spending Patterns within the Partner States

	Spending as of	Reported Use as of	Spending as of	Reported Use as of	Spending as of	Reported Use as of
	Jun-02	Jun-02	Dec-02	Dec-02	Jun-03	Jun-03
Illinois	\$10,178	27	\$10,178	41	\$15,451	41
Iowa	\$9,082	12	\$9,082	21	\$10,000	27
Michigan	\$0	0	\$4,271	1	\$5,151	1
Minnesota	\$80	5	\$6,479	11	\$9,998	13
Montana	\$342	6	\$684	6	\$8,997	11
Nebraska	\$7,004	70	\$10,201	102	\$10,201	111
North Dakota	\$0	1	\$342	1	\$10,000	3
Oklahoma	\$3,927	19	\$5,069	34	\$8,016	47
South Dakota	\$256	1	\$6,363	3	\$7,988	4
Wyoming	\$1,975	29	\$5,553	31	\$10,000	32
Project Total	\$32,844	170	\$58,222	251	\$95,802	290

Table 7: Summarizes spending of grant resources and use of Wonderwise kits within each state. The use of Wonderwise kits includes uses with both youth and adults that have been reported.

Each partner state was on a different timeline when it came to purchasing resources and providing training and there was some confusion about how resources could be utilized. In Minnesota, the staff at the first state-wide training developed ideas like running local workshops and developing promotional materials, but later learned they could not use the grant funds to pay for workshop expenses or promotional materials. Because the grant funds were designated for kits and supplies, they could not be used for travel expenses, workshop site rentals or promotional material. It was hoped that states would look for other sources of funding for these expenses. This did happen in Illinois where promotional materials for the Wonderwise project were developed and funded separately. However, in Minnesota, those ideas had to be dropped because no state funding was found. In South Dakota, Montana and Nebraska, concerns about travel expenses were handled by having the state contact and the Wonderwise Workshop Leader travel across the state providing workshops. This reduced the expense for staff and volunteers attending workshops.

c. Interpretation of Findings

Within the ten partner states, different decisions were made about when to purchase kits. Figure 2 shows how some states, like Illinois, Iowa and Nebraska made large purchases of kits as soon as the revised kits were available in November, 2001. Table 6 shows how this decision to purchase kits early was reflected in higher levels of reported use in Nebraska and Illinois. Other

states, like North Dakota and Montana waited until 2003 to purchase all their kits and have not begun using them as widely. However, because use numbers are based on voluntary reports, they may not reflect the pattern of actual uses. And individual situations, such as a big push to use Wonderwise in afterschool programs in Wyoming beginning in 2002 meant that just a few kits were widely used in that state.

Unfortunately, by this phase in the dissemination process, inconsistent levels of reporting of the activities occurring on a local level began to obscure the picture of kit use within the partner states. While it is difficult to determine to what extent availability of kits translated into increased use, the overall trend is clear: more kits available generally meant more use of the kits on the local level.

Providing kit resources at the same time as workshops did seem to be a key factor in successful dissemination. Getting kits into the hands of the staff and volunteers at the workshop or immediately following meant that they had the resources to use the kits right away while they were excited about the project. This was successfully done in Montana with their second state-wide series of workshops and in Nebraska, Iowa and South Dakota with all their workshops. In Oklahoma, kits were not distributed at the workshop, but individuals were able to order one kit of their choice following the training.

All reporting of kit use was voluntary and the uneven reporting from the states highlights the issue of communication again. States that had more contact with the Wonderwise staff reported more uses. An increased level of communication may have increased the level of reporting. In addition, it became clear in this phase that some of the state contacts were unaware of the limitations on the funding, which was restricted to purchases of kits and supplies. These lapses in communication on both sides indicated that a formalized periodic means of direct contact may have alleviated some of these difficulties.

5. Using Wonderwise within each state 4-H program

a. Summary

One of the goals of the Wonderwise 4-H project was that within the three year grant period all 9 Wonderwise kits would be widely disseminated to 4-H leaders and staff for use with youth in the ten state region. The different phases of the dissemination all worked toward this goal. The process began with recruiting states, then piloting the kits with 4-H users and getting

feedback on how to revise the kits to meet the needs of 4-H audiences. It continued through workshops that introduced the kits in all ten states, grant funding to distribute kits locally and then use of the kits with youth on a local level. As Figure 3 illustrates, every state went through these phases on a different schedule. The phases were not necessary exclusive of one another. Wyoming began offering state-wide workshops at the onset of the piloting phase, but Michigan didn't offer any workshops until the last year of the project. The phases were in fact overlapping and contiguous. This pattern is in part a result of the differences between the populations, programs and needs of each state. The project's focus on local control and decision making guarantees that each state will follow its own pattern. However, highlights of the programs in each state may provide ideas that can be adapted to meet the needs of other states as well.

Wonderwise 4-H Activity Levels

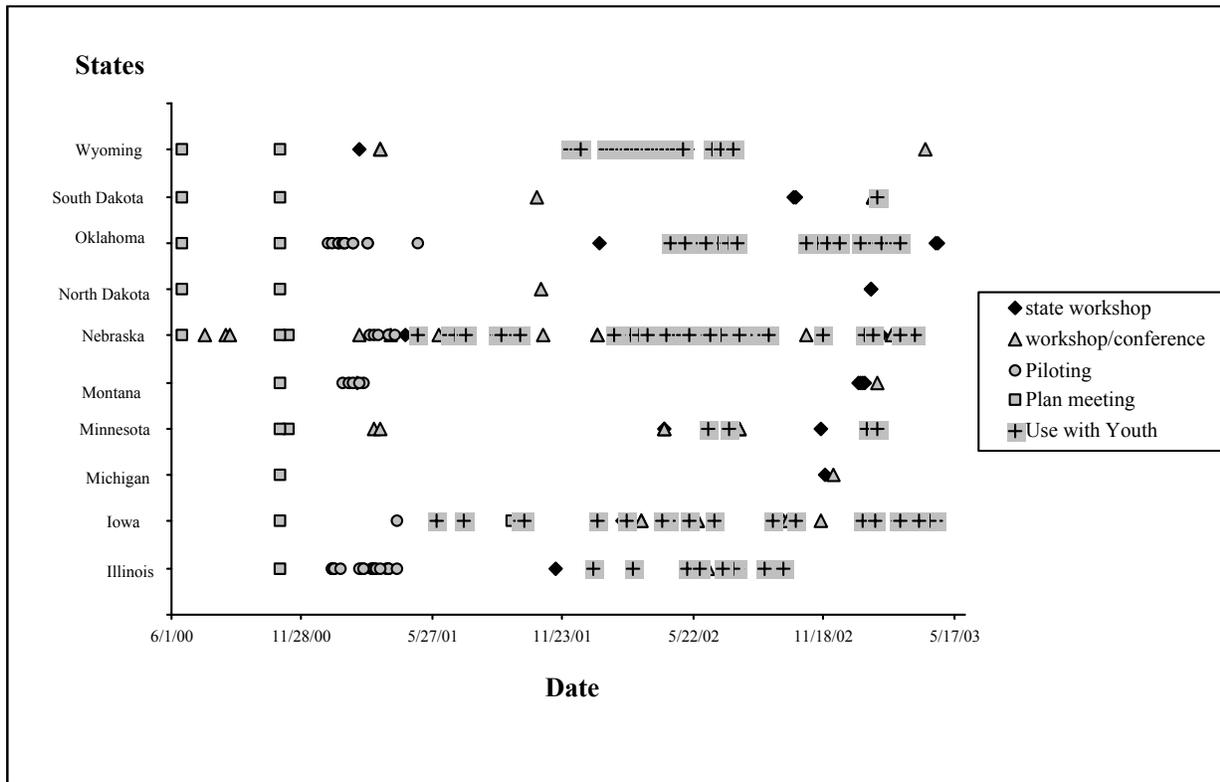


Figure 3: This graph shows the activity level within each of the partner states. Each symbol represents a single use. The period represented is June 1, 2000 through June 1, 2003.

Illinois achieved a high level of integration of Wonderwise into their state 4-H program very early in the project through a focus on setting up a state-wide task force with a mix of people from different types of positions within 4-H. Their dissemination focused more on using Wonderwise with youth in a variety of settings. Figure 3 reflects this strategy in the high number

of uses with youth. The task force was able to find outside funding that was used to purchase additional kits and develop marketing materials to promote the project. Illinois was the only state to do this. The task force also decided how to allocate funds to purchase kits and supplies. The only state-wide workshop in Illinois was November 2001 for 32 people from all over the state. A second state-wide workshop was planned, but then eliminated due to the cost. Additional local workshops have been held for specific projects. Most of the use of Wonderwise, however, has come from the initial workshop. Wonderwise was quickly integrated into a variety of programs across the state ranging from clubs, day camps, classrooms, an all girls' overnight event, afterschool programs and a massive day camp program that reached 2240 campers at 23 sites in 2002. In Illinois, the people involved in Wonderwise have been very active and have used the project with youth in a variety of settings. The efforts of these committed individuals rather than extensive statewide workshops have made the project widely disseminated and successful.

Iowa has also been very successful, but has used a dissemination strategy that focused on providing workshops and making lots of kits available. Because the state contact of Iowa had a position within 4-H that emphasized educator workshops in science before he took on this project, that was the emphasis if the dissemination of Wonderwise 4-H. It was incorporated with other material into a series of science and technology workshops for 4-H staff and classroom teachers. Following the state-wide workshop in February, 2002, there were six local workshops by different people held in Iowa that year (see Figure 3). In addition to a heavy emphasis on workshops, Iowa quickly spent the money allocated for kits and supplies and tried to find additional sources of funding. The net result was a state with large numbers of people familiar with using Wonderwise 4-H and large numbers of kits available for use.

Michigan had a slow start, but once they got moving, they were able to get a lot of activity going. They did not participate actively in piloting kits, and did not start using the revised kits until long after they had become available. Their first state-wide workshop was November, 2002. This three day long workshop at the 4-H Leadership Training Center was very successful. A strong community developed and the staff left with great ideas about how to use Wonderwise 4-H in a variety of existing programs and some new ideas as well. Many states have had difficulty getting staff to workshops. The cost, travel, and time away from other duties are all factors, however, when sufficient time is invested in the workshop, the participants feel it

is well worth their while. This investment of time is part of what made the Michigan workshop successful. Since November, the state contact has taken Wonderwise 4-H to a national conference and done local workshops as well, but no demographic forms have been received. This is largest issue in Michigan. The lack of reporting makes it difficult to be certain what is happening in the state.

Minnesota had particular challenges because following their first workshop, there was a major restructuring of 4-H within the state and many of the people who had participated were eliminated. Essentially Minnesota started over in the fall of 2002 with a second set of workshops and has been growing in their use of Wonderwise from that point. Minnesota also had unique communication issues, particularly regarding how grant funding could be used. Following their first workshop a plan for promoting the kits was set up, but the plan relied on using grant funding to promote the kits. They were not able to find another source of funding for the plan, so it was never put into action. However, one benefit from their early workshop was that the state had a distribution system in place for getting the kits out use on the local level, and with renewed interest, things moved quickly following the workshop in November, 2002.

Montana started out strong with one of the first state-wide workshops in February, 2001 and also participated actively in piloting the original kits. When the person who had been designated the state contact moved on to a different position, Wonderwise activity within the state stalled. The lack of leadership left Montana in with happening for several months. However, when someone else was able to take over, things moved quickly. Like Nebraska, they scheduled a series of local workshops. However, due to the size of the state, the workshops in Montana drew people from a much larger region, and were longer. The workshops tripled the number of people participating in Montana and resulted in a very wide distribution of the kits. Within two weeks one of the people who had attended a workshop had set up another workshop for her local area. It is anticipated things will begin moving very quickly now in Montana with strong leadership on the state level and a lot of interest in the project on the local level.

Nebraska, as the center of the Wonderwise Women in Science project, faced unique challenges. When Wonderwise 4-H was initiated in this state, the kits had already been widely distributed in Nebraska through a school based network as part of the earlier Wonderwise projects. The state has focused on using Wonderwise in unique ways, has had more regional workshops and has reported more use of Wonderwise 4-H than any other state. Nebraska

quickly reached a level of integration with five local workshops held in 2001 and two more in 2002. However, even in Nebraska, there have been communication gaps within the 4-H network about the project, leaving many people within the state 4-H system unaware of the project or of who else was involved. Nebraska did not establish a state-wide network of Wonderwise 4-H users, perhaps because rather than one or two long state-wide workshops, Nebraska chose to have a series of short local workshops. Reporting in Nebraska has been strong and consistent and indicates a high level of Wonderwise use within Nebraska 4-H.

North Dakota is one of the states that continued using the original kits for an extended period even after the revised kits were available.. North Dakota was also one of the last states to schedule a state-wide workshop, in January, 2003. The kits had been ordered to distribute at the workshops but did not arrive in time. They have since arrived and been distributed widely across the state. The project was very well received at the workshops and another workshop is currently being planned. It is anticipated that Wonderwise 4-H will now be quickly integrated in North Dakota. The advantage of a late workshop phase for this state is that there is no waiting. All the kits are now available and they can immediately be put to use.

Oklahoma began using Wonderwise 4-H within existing programs, but went on to offer several workshops and focus on getting kits out to everyone who attended a workshop. This strategy has worked very well for that state. Oklahoma had more individuals participate in piloting than any other state. Following the pilot study, there was a lull in activity until the first state-wide workshop in January, 2002. All 24 of the people who attended that workshop received funding to purchase a Wonderwise kit and supplies. To encourage use of the kits, and provide additional resources for people who would use them, if they continued to use the kit and report on their use, they received funding for a second kit. In 2002, Wonderwise was used in school settings, day camps, residence camps and a lock-in throughout Oklahoma.

Like North Dakota, South Dakota did not start actively using Wonderwise 4-H until well into the project. There was a local workshop in 2001, but the first state-wide workshop did not occur until October, 2002. The state contact for South Dakota has done a lot of work sharing Wonderwise resources within the local afterschool and child-care network. There are now many plans for using Wonderwise 4-H within the state.

For Wyoming, getting people trained early in the process, bringing Wonderwise to several regional conferences, and leadership with lot of enthusiasm for the project resulted in

strong integration within their state. Wyoming was one of only two states who introduced Wonderwise with a state workshop during the pilot period. The first state-wide workshop in Wyoming was held in February, 2001. This means that before the pilot period was even over, Wyoming had 21 people familiar with using Wonderwise. They moved quickly into a period of workshops and kit use, but didn't purchase additional kits and supplies until the revised kits were released in late 2001. This was followed up with a second state-wide workshop in May, 2002. As a result of this quick start, Wyoming reached a level of integration, with kids widely distributed and used before the end of 2002.

Throughout the process, the importance of local control and local decision making has been illustrated by many of the partner states. By using the power of local decision making, which is emphasized by the 4-H organization, the project has taken on a different look in each state and was able to meet different needs in each state as well. The flexibility of the Wonderwise kits has enabled the 4-H staff to use the kits to complement the programs that 4-H staff had already committed their time to. It also allowed each 4-H state, county and club to use the kits in different ways.

The state contact for North Dakota, was also the 4-H specialist who works with science and natural resources. He explained how both roles work together, "I see a lot of pieces of Wonderwise fitting with the work that I am doing in other areas. That's one of the things I like about the program because I am so busy with all that I do, I'm almost never here, as you have found out." The state contact for Oklahoma also integrated Wonderwise first into what she was already doing, "I think I started focusing on it [Urban Ecologist] because it tied closely with my water quality program and that helped a lot."

Most states used Wonderwise to enhance their science education program, but in some places, it was used in much more innovative ways. The state contact for Michigan described how Wonderwise was used in a literacy program for younger students in Michigan, "We have used Wonderwise to link children's literature to science. The primary audience is K-3 curriculum so we have had to simplify some activities. We have been using it mostly in the summer program, where it is a mixed audience with some older siblings. Sometimes older kids are helping the younger ones work on science activities. We are integrating that piece in our literacy program and we have identified some children's books that they can then read about it. They do a science activity and then read a story about a sea otter or living in the city and what it

is like, then they write stories about what they learned.” Illinois also adapted the Wonderwise activities for use with first through fourth graders. Both states could have benefited by sharing ideas.

In Wyoming, it is being used to provide engaging activities in an afterschool program. The state contact explained, “I have an afterschool program for latch-key kids. It’s for upper elementary youth and it emphasizes hands-on science among other things and I’ve used Wonderwise for two years. It is working out very well. Kids like it a lot.”

Michigan’s state contact sums up the importance of flexibility in this way, “I like Wonderwise because you can pick it up and plug it into any program. It’s hands-on activities that are science based and I don’t think kids get enough science. They get a chance to practice problem solving and thinking. It addresses multiple learning styles. I think it is a very flexible curriculum. You don’t have to have started at point A before you can go to point B, you don’t have to complete the whole thing for it to make sense. If you only have an hour, you can find something to do, if you have half a day, you can find more to do.”

The Wonderwise project has a focus on women scientists, and particularly women of color. One of the stated goals of the project is to encourage girls to continue to pursue an interest in science. Though this is not an explicit goal for 4-H, the focus on women and minorities helps state leaders reach other goals. Illinois’s state contact described the reaction within his state to role models who are primarily women of color, “We have been getting a good response to something new and geared to females. It is science, and in some of our more minority populated areas, we are finding it is a pull and an interest for those potential audiences the fact that the featured scientist is a woman of color.” For South Dakota, the focus on women is important. As their state contact explains, “I am very interested in anything that is women in science. I think that is a very important issue to deal with. Girls and boys both tend to shy away from science, but particularly girls. I liked that part of it.” For others, it is simply the focus on building relationships that is important. The state contact for Nebraska and co-PI for the Wonderwise 4-H project explains, “The concept behind it, of the scientist and getting to know the scientist, is the most attractive part. It builds in the relationship that is not there in other curricula. It makes it [Wonderwise 4-H] unique.”

The state contacts for the project noticed that the impact of Wonderwise within their states was not limited to the youth who participated in the program. They also reported positive

impacts on the adults who led the activities. In a volunteer-based organization, this impact on leaders should not be overlooked. Adult volunteers who feel they are getting something out of their involvement are more likely to continue working with the project. The state contact for Michigan described the impact of the project on volunteers being introduced to Wonderwise for the first time, “Even just out of high school AmeriCorp volunteers will walk in saying, I didn’t do very good in science in high school, and they walk out saying, If I had had this in high school, I would have done good. They are confident. They learn, we can learn this together.” This confidence is carried on into the programs they do with youth. Hopefully their more positive attitude toward science is passed on to the participants. The state contact for Iowa reinforced that this impact is not limited to young volunteers, “Great stuff. The main portion that I’ve always seen with science is that teachers and non-formal folks are scared to pick it up because they don’t know anything about it. Wonderwise is one of those things that is not intimidating. It provides an opportunity for them to teach something they don’t know a lot about and they are willing to learn with the kids.”

b. Interpretation of findings

The key factor that has made the final phase of the dissemination more successful is flexibility. For all states, the ability of Wonderwise 4-H to complement and improve existing programs has been essential. Especially in the current atmosphere of budget cuts and staff reductions, there is little time or money available to begin new programs, however, there is a great need and motivation to improve the quality of what is already being done. When staff and volunteers learned about Wonderwise 4-H and saw how it could help them do what they are doing more quickly and provide kids with a better experience, it was quickly adopted. In addition, the focus on women scientists of color and the positive impacts on the adults who led the activities were features that made adopting and using Wonderwise more attractive.

Communication between all the partner states about the innovative uses of Wonderwise might have been beneficial in sparking further innovative applications of the project. There were several challenges that were addressed by multiple states, such as adapting Wonderwise 4-H for use with younger youth, or developing promotional material to get the word out about Wonderwise. If there had been more communication between states, they might have been able to share ideas and strategies to maximize their resources. All of the states used the Wonderwise

kits in innovative, unexpected situations and sharing those creative ideas in some way could have sparked even more innovative uses.

While the dissemination of Wonderwise has been more widespread in some partner states than in others, particularly Illinois, Nebraska, Oklahoma and Wyoming, all of the participating states have achieved some measure of success and continue to use Wonderwise with youth in their states.

Conclusions and Recommendations

It would be nice at this point to be able to offer a recipe for success from this project that could be applied to other similar dissemination projects. But the simple answer is there is no one recipe that worked for all states. Each state that successfully integrated the project quickly did it in a different way. States that were slower in the process may be more successful in the long run by avoiding issues of confusion or delay that were faced by states who scheduled workshops before all the kits were available. However, states that began providing workshops early in the project have been able to get a lot of people familiar with Wonderwise. There simply is no easy answer with an organization as large and complex as 4-H, but there have been important lessons learned in this dissemination process that can be applied to similar projects.

There were three primary questions guiding this evaluation. How did the context of the individual states impact the dissemination process? What were the strengths and weaknesses of the dissemination plan and process? To what extent did the project dissemination meet its goals? These three questions shaped the investigation and offered some important insights into the process as a whole.

To what extent did the project dissemination meet its goals?

Wonderwise 4-H was very successful in recruiting and organizing partner states. The project had originally intended to disseminate the Wonderwise Women in Science Learning Series to seven Great Plains states by partnering Wonderwise with 4-H Youth Development programs. It quickly grew to include ten states; Illinois, Iowa, Michigan, Minnesota, Montana, Nebraska, North Dakota, Oklahoma, South Dakota and Wyoming. Each state designated a committed local leader who advocated for Wonderwise 4-H within their state.

Piloting the kits with 4-H users provide valuable feedback that was integrated into revising the six original kits and designing the three new kits. It also introduced the project to a much wider audience in the five states that participated. It was in this phase that lack of a formal structure for communication began to be a problem as when the release of the revised kits was not well publicized.

The use of workshops to introduce the Wonderwise kits on a large scale was very successful. Throughout the project there were more than 50 workshops held on the local or statewide level introducing the Wonderwise 4-H project to 1067 4-H staff and volunteers. In addition, 26 local, regional or national conference presentations by state contacts, local 4-H staff and the Wonderwise Workshop Leader reached an additional 2063 people. Furthermore, many states used workshops to begin the process of disseminating kits throughout their state.

The grant funding for kits and supplies was successful in encouraging all of the partner states to participate in the project because they could see it would have direct benefits for the youth in their state. It also guaranteed that each state would have an ample supply of kits available to meet local needs. Local control of the spending allowed states to make decisions about which kits would best meet their needs. It also allowed every state to decide how they would make kits available to their staff. Some states used a county-based model while others created central or regional systems of kit distribution. Lack of communication regarding specific expectations of the states, particularly regarding how grant funds could be used and the expectation that states would seek additional sources of funding for the project led to some confusion in this phase. But overall, this phase was very successful. Through the Wonderwise 4-H project, 1789 science kits have been distributed in the ten state region.

The reported uses of Wonderwise 4-H in the ten partner states include over 23,000 youth and 6600 adults. Wonderwise kits have been used in afterschool programs, camps, day camps, school enrichment programs, at fairs, as part of 4-H recruitment activities and by clubs throughout the region. It is clear the numbers reported here do not represent the real use level of the Wonderwise 4-H kits. Voluntary reporting makes it difficult to determine what percentage of the real uses have been reported, but it is certainly significantly higher than what has been reported.

In addition, the strong network of the 4-H Wonderwise users in the partner states and the wide availability of the kits suggests that use of the Wonderwise kits within the 4-H communities will not only continue but may grow in the next few years.

What were the strengths and weaknesses of the dissemination plan and process?

The greatest strength of the dissemination plan appears to be the flexibility that emerged as a critical factor in each phase of the process. This included flexibility in accepting additional states, flexibility in adapting workshops to meet local needs and flexibility in implementing local decision-making regarding the purchasing of kits and supplies. The Wonderwise 4-H project could not have been as successful at meeting local needs without the ability and willingness to be flexible in how each state interacted with the project and utilized the kits.

The flexibility of the kits themselves was also critical in the extent that Wonderwise 4-H was able to complement and improve existing programs. The kit flexibility allowed state contacts to integrate Wonderwise into other projects they had already committed their time to, and thus give them additional time to spend on the project. It allowed Wyoming to use Wonderwise to provide science opportunities to 4th to 6th grade youth in an afterschool program while Michigan used the same curriculum to enhance a literacy program for 1st through 4th graders. There were also specific attributes of the kits themselves that became important in some states, such as their focus on women of color, the personal connection to a scientist role model or the positive impact on adult volunteers.

The weaknesses that emerged seemed to come back again and again to issues of communication. The personal connections that initially drew state contacts into the project made communication very smooth at the onset. But as the project grew and became more complex with each state at a different point in the process, with different needs and different levels of experience with the project, lapses in communication became problematic. A more structured, formalized strategy of communication was needed, but never fully developed. States may have benefited from hearing about innovative uses in other areas. Reporting of uses may have increased with more regular communication to remind local users about the project and the need to complete demographic forms.

How did the context of the individual states impact the dissemination process?

The context of the ten individual states who were part of the partnership was very important in shaping the overall nature of the project. Each state had differing priorities, amount

of time to invest in the project and timelines for participating in the project. The ability of the project and the kits themselves to focus on the individual needs of each of the partner states is a large part of the overall success of the project.

Three of the largest factors on the local level were budgetary concerns, geographic distances and populations. Budgetary concerns in some states reduced the number of workshops presented. They also had an effect on the overall number of people trained by lowering workshop attendance or through staff reductions following workshops. In some states, large geographic distances and low population density made it difficult for staff members to travel to workshops. Several states chose to have workshops held at different sites across the state rather than a centralized location. This lessened the travel problem, but made it difficult to develop a state-wide network of people who had been trained. In some states, it was possible for a staff member to not even know who was using Wonderwise in their neighboring county because they had attended different workshops.

Differences in populations also created different needs within the states. Illinois had the most structured local plan for dissemination and was the only state that developed marketing materials for Wonderwise. It is also the state with the largest population, and therefore the greatest need for structured communication strategies. Wyoming, with the lowest population in the partnership, was very successful at relying on more personal methods of communication because the state contact had a direct connection to most of the people using Wonderwise within the state.

It is quite possible that some of the communication issues that arose for the project as a whole are linked to the population issue. Nebraska is a state with a low population highly concentrated in the eastern part of the state where the University of Nebraska State Museum is located. The museum staff are used to relying on personal communication in their interaction with other formal and informal educators throughout the state. The staff worked hard to develop personal relationships as part of the Wonderwise 4-H project and tended to rely on personal relationships in communicating. This communication style, which was very effective on a small scale, led to communication lapses as the project grew.

Recommendations

The Wonderwise 4-H project was very successful in disseminating the Wonderwise Women in Science Learning Series kits to 4-H staff and volunteers for use at the local level with

youth in informal settings. The project was able to capitalize on the assets of the already established Wonderwise project and the strengths of the 4-H networks in all the partner states to provide high-quality science resources for youth in these states. The Wonderwise 4-H project provides a well-structured model for disseminating a new curriculum through a network of informal educators. It exemplifies the benefits of a well thought out plan and organizational structure. Based on the both the strengths and weaknesses that have been identified with the Wonderwise 4-H dissemination project, three recommendations can be made for similar projects.

- 4. Create a clear plan from the onset of the project that makes expectations of partners explicit.** The Wonderwise 4-H project started out with a well-developed plan for how the project would take shape. The plan included explicit expectations of all the partners involved, and identified the different phases at the different levels of the project that were expected to occur over time. Resources, both financial and staff time, were allocated in a thoughtful manner that helped facilitate success and ensure greater commitment among the partners participating. The timeline for the project was long enough to allow partners who were slow in getting started with the project enough time to be successful. All of these elements in the planning phase set the stage for a successful dissemination of the project.
- 5. Build in flexibility that allows partners to fulfill their obligations in diverse ways.** Working with multiple and diverse partners, particularly in a locally-controlled organization like 4-H, meant that flexibility would be a critical element throughout the life of the project. In any extended partnership, every partner has unique needs, assets and priorities that must be addressed if the partnership is going to be successful. To optimize success, the project must address local needs and complement existing programs. The Wonderwise 4-H project gave each partner control of resources and decision-making within some specific parameters. This empowered each partner state to plan for itself and to work according to its own schedule and needs. This flexibility was an essential element in the successful dissemination of the Wonderwise 4-H project.
- 6. Establish a structure for formal and informal communication with partners.** Communication has surfaced repeatedly throughout this report, as both a strength and a weakness. This is an issue that is frequently identified within organizations as a

critical element for success. Both formal and informal communication are necessary and must be facilitated. While personal relationships are an asset that should be nurtured, they cannot replace a more formal structure of communication. Staff time should be specifically allocated for providing a central point of communication and maintaining a communication network. Periodic updates through a newsletter, email or other means would have helped the Wonderwise 4-H partners feel more in touch with the project and would have facilitated better reporting, and perhaps also higher compliance with other obligations. Good communication within a project also encourages creativity by sharing ideas, highlight successes of the project as they occur and increase the level of awareness of local activity by central leaders of the project.

Appendix A Wonderwise 4-H State Contact Interview

Name: _____ Date: _____
 Title: _____ State: _____
 Interview length: _____

Interview Questions

1. How did you first hear about Wonderwise?

[do not read responses]

- a. North Central 4-H Leadership Forum (7/18/00)
- b. Personal contact with Gary Heusel (describe context and date)
- c. Other (describe context and date)

2. Who in the administrative structure of your state made the decision to participate in the Wonderwise project? How did you become involved in the project? Why did you become involved?

[do not read responses]

- a. I did
- b. State Program Leader
- c. Other influence (describe)

3. Now I want to talk about how you have participated in the Wonderwise 4-H project. Which Wonderwise training sessions have you attended at regional or national 4-H conferences? Which Wonderwise training sessions have you attended in your state? Have you led any Wonderwise activities with youth? (Complete Demographics form)

Workshop	Location	Date	Trainee/Trainer

Who can I contact for more information about that workshop?

4. How have you disseminated information about Wonderwise?

[do not read responses]

- a. person to person communication (specify email, written, face to face, etc.)
- b. person to group communication (specify email, newsletters, etc.)
- c. meetings
- d. trainings
- e. volunteer forums

f. other (describe)

5. Tell me about how Wonderwise is being used in (your state).

Date	Workshop	Location	Type	Led by	Email/phone
			Club		
			Camp		
			School		
			Afterschool		
			Other		

Who are the primary people involved in that project?
 What is being done by clubs/camps/in schools/in afterschool programs?
 Is there anything else being done in (your state)?

6. Is there anyone else we should talk to about the use of Wonderwise in (your state)?

7. How does Wonderwise compare to other 4-H curriculum you have used?

Curriculum	Ease of use	Quality of materials	Engagement	Relationships
SERIES				
SAY				
Character Counts				

8. Are there any creative uses of Wonderwise that you think we should be aware of? As you hear of things, please let us know.

9. Is there anything else you would like to share with me?