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## Assessing Volunteers' Needs and Interests to Inform Curriculum Development in 4-H

### Abstract

4-H volunteers have the knowledge and experience to benefit the Youth Development Program by helping inform curriculum development. To capitalize on this, researchers at the University of California, Davis, used focus group interviews and a statewide survey to identify curriculum and programmatic needs in 4-H Animal and Veterinary Science from the perspectives of 4-H volunteers. Survey results and a review of subsequent curriculum development projects that were informed by the outcome data are discussed.

**Keywords:** 4-H animal science, 4-H veterinary science, curriculum development, needs assessment survey, volunteer development

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### Martin H. Smith

Associate Specialist in Cooperative Extension  
Veterinary Medicine Extension  
University of California - Davis  
Davis, California  
[mhsmith@ucdavis.edu](mailto:mhsmith@ucdavis.edu)

### Cheryl L. Meehan

Staff Research Assistant  
Veterinary Medicine Extension  
University of California - Davis  
Davis, California  
[clmeehan@ucdavis.edu](mailto:clmeehan@ucdavis.edu)

### H. Steve Dasher

4-H Youth Development Advisor  
University of California Cooperative Extension  
San Diego County  
San Diego, California  
[hdsasher@ucdavis.edu](mailto:hdsasher@ucdavis.edu)

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## Introduction

4-H Animal and Veterinary Science provide excellent opportunities for positive youth development. Youth

involved in 4-H projects in these areas can acquire agricultural and scientific competencies and develop life skills (Gamon & Dehegedus-Hetzl, 1994; Shurson & Lattner, 1991; Smith, Enfield, Meehan, & Klingborg, 2004a; Smith, Meehan, C. Enfield, George, J& Young, 2004b; Ward, 1996); however, in order for California 4-H to most effectively deliver these results, there is a need for updated and expanded 4-H Animal and Veterinary Science curricula (Ponzio et al., 1994; Smith & Klingborg, 2000).

The development of new curricula for a broad audience requires strategic planning (Curray, Cohen, & Lightbody, 2006). A necessary first step in this process is the collection of data that identify the desired outcomes and results from the perspective of the individuals who will lead the activities (Wiggins & McTighe, 1998; Bencze & Hodson, 1999). Thus, the purpose of the study reported here was to better understand the needs and interests of 4-H Animal and Veterinary Science volunteers and to use these data to inform the development of curriculum resources.

## Methods

A sequential exploratory mixed methods design (Creswell, 2006) was used in the study. This approach uses qualitative data from focus groups to inform the development of a quantitative instrument. Three focus group interviews with 22 4-H volunteers from four counties located in different regions of California were held. Interview questions were based on topics identified in the literature, including: animal care practices; programmatic resources; and educational needs (Ponzio et al., 1994; Smith & Klingborg, 2000). Outcome data from the focus groups were coded and used to develop survey questions. In order to help ensure construct validity, survey questions were pilot tested and revisions were made based on participants' feedback. The final version of the survey included 50 questions.

Surveys were distributed to 4-H Animal and Veterinary Science volunteers in paper format and electronically through the California 4-H Youth Development Program's Web site. Online survey responses were automatically entered into a database; data from hard copies were added manually. A principal components factor analysis was used to aid in the interpretation of response data. Varimax rotation was applied. An eigenvalue of one was used as a cut-off in factor determination.

## Results

A total of 432 completed surveys (274 electronic submissions; 158 hard copies) were collected. The sample population represented 46 of 58 California counties. Volunteers from rural areas made up 56% of the respondents; 31% were from suburban areas; and 13% were from urban areas. Respondents ranged in experience from first-year volunteers to individuals with over 20 years of experience.

The factor analysis characterized the main trends of the response set. The resulting factors, Curricula and Resources, Promoting Animal Care, and Volunteer Training Needs, accounted for 77% of the total variance. These factors were interpreted based upon the original goals of the survey and the themes that united the questions with the strongest loadings on each factor. The two factors most relevant to this article, Curricula and Resources, and Promoting Animal Care, and their associated sub-topics are presented in Table 1.

**Table 1.**  
Factors and Associated Sub-Topics

Programmatic Needs: Curricula and Resources	Programmatic Needs: Promoting Animal Care
Use of published curricula	Training opportunities for youth <b>prior</b> to obtaining a project animal
Curricular needs by species	Development of animal care plans
Curricular needs by subject	Concern regarding care of project animals

### Programmatic Needs: Curricula and Resources

The majority of volunteers (66 percent) responded that they occasionally, rarely, or never used published curricula when leading Animal or Veterinary Science projects, and 86% stated that they needed additional

curricula and resources to help them lead projects. The most requested species groups and subject areas are presented in Tables 2 and 3.

**Table 2.**  
Curricular and Resource Needs: Species Groups

Species Groups	Percent Response
Swine	23%
Rabbits	15%
Sheep	14%
Horses	13%
Poultry	12%

**Table 3.**  
Curricular and Resource Needs: Subject Areas

Subject Area Interests	Percent Response
Nutrition	20%
Preventative Health Care	18%
Zoonotic Disease	14%
Animal Handling	14%
Animal Behavior	12%

## Programmatic Needs: Promoting Animal Care

Most volunteers (94%) reported that youth are responsible for providing care to their project animals. To support youth in this role, the majority of the respondents (61%) indicated the need for curricula that cover topics such as housing, nutrition, handling, and veterinary care. Additionally, 44% of the volunteers stated the need for curricula on animal care that could be completed prior to youth obtaining a project animal.

This desire for curricula that promote knowledge and skills development relative to animal care was consistent with the volunteers' interest in maintaining high standards of animal well-being. The majority (52%) of the respondents indicated a concern for the well-being of project animals, and nearly all (98%) indicated the importance of maintaining the best possible practices of animal care.

## Discussion

The survey data revealed that the content areas where volunteers needed the most resources and support included animal health, animal nutrition, and animal husbandry. Volunteers indicated a need to have these concepts applied through educational activities that increase youths' knowledge and skills relative to animal care. When youth are given opportunities to learn and practice appropriate animal care, both knowledge and attitudes can be positively affected (Miller, 2006; Grégoire, 2004); therefore, one of the main goals of the curriculum development projects informed by this study was to provide such opportunities.

The first curriculum project informed by these data is entitled ***From the Animal's Point of View***. Its hands-on, inquiry-based activities focus on developing youth competencies relative to the selection and care of sheep, swine, and rabbits, with an emphasis on the development of a comprehensive animal care plan. Furthermore, the curriculum activities have been designed to be used by youth whether or not they have access to a live animal. Thus, they may be implemented by volunteers **prior** to youth obtaining their project animals to help inform them of specific project needs and requirements.

The second curriculum project, **Youth Development Through Veterinary Science**, includes a set of integrated activities that focus on biology, physiology, and veterinary care. Through case-based scenarios, this curriculum addresses the needs for materials relevant to animal husbandry and health, and facilitates the development of skills that promote quality animal care.

## Conclusion

4-H volunteers have the knowledge and experience to benefit the Youth Development Program by helping inform curriculum development. To capitalize on this, researchers at the University of California, Davis, used focus group interviews and a statewide survey of volunteer leaders to identify curriculum and programmatic needs in 4-H Animal and Veterinary Science. Survey results and a review of subsequent curriculum development projects that were informed by the outcome data are discussed.

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