

September 26, 2014

Brigham Young University (BYU)
Office of Research and Creative Activities
A-285 ASB
Provo, UT 84602

Dear BYU ORCA Grant Committee,

My colleagues and I are pleased to submit the enclosed proposal, *Development of Education Materials about Food Safety for the Kids on the Move Program*, in regards to the Food Safety Awareness Grant through the Office of Research and Creative Activities at BYU. We are requesting a total of \$623 to carry out a 13-week project (Sept. 2014 – Dec. 2014). As requested, you will find the enclosed proposal and an additional 5 copies of the proposal.

Thank you for your time and consideration.

Sincerely,

Ellie Snyder
Project Manager
Brigham Young University
Dept. of Nutrition, Dietetics & Food Science
S233 Eyring Science Center
Provo, UT 84602
Phone: 605-759-4511
Email: elizabethsnyder13@gmail.com

Project Title: Development of Educational Materials about Food Safety for the Kids on the Move Program

Start date: September 8, 2014

End date: December 8, 2014

Funds Requested: \$623

Team Members' Names:

Ellie Snyder (Project Manager)
389 North Belmont Place Apt 248
Provo, UT 84606
Phone: 605-759-4511
E-mail: elizabethsnyder13@gmail.com

Danielle Billat
Phone: 801-885-5892
E-mail: danielle.billat@gmail.com

Carrie Draney
Phone: 509-993-8381
E-mail: carriedraney@gmail.com

Sydney Roberts
Phone: 720-212-7562
E-mail: sydneyaliseroberts@gmail.com

Project Collaborator:

Kids On The Move
475 Hospital Dr,
Orem, UT 84057
Phone: 801-221-9930

Abstract

The aim of the proposed project is to develop lesson plans for Kids on the Move (KOTM) teachers about food safety. Specifically, the project will assist in the process of educating KOTM clients about safe food preparation techniques to use in the kitchen. Four nutrition students will be involved in the creation of the lesson plans, working under the direction of Rickelle Richards, PhD, MPH, RDN and Damian Rodriguez, DHSc, MS. The lesson plans will include an actual paper copy of the lesson plan, a Prezi presentation, fridge and thermometer activities, and cultured petri dishes, all created by the nutrition students. The focus will be on the four basic food safety principles: cook, clean, chill, and separate. The lesson will be presented to KOTM teachers in its entirety to help them understand the principles, after which they will be given the lesson materials to teach clients. The entire project is being done with the aim that through our education, clients at KOTM will better understand food safety, apply the principles in their kitchens, and ultimately avoid the ailment of food poisoning. The total budget request is \$623.00 to carry out a 3 month project (September 2014-November 2014).

IV.a.Needs Statement

Kids on the Move is a program that provides services to families and children with special needs. Their mission is to encourage the development of young children through three programs: early intervention, early head start, and autism bridges.¹ Specifically, our project focuses on the early head start program and is aimed towards low-income families. The early head start program provides nutrition education and support for low-income families and strives to help improve nutrition and meal preparation in the home.¹ Our overarching goal for this project is to educate low-income families on the importance of food safety practices in the home in order to decrease the incidence of foodborne illnesses. Overall, the goal to educate families on key food safety practices will motivate families to use these practices and help these individuals to meet several of the Healthy People 2020 Food Safety objectives (including FS-5.1 - FS-5.4).²

Although foodborne illnesses are preventable, each year more than nine million foodborne illnesses occur in the United States.³ Most of these cases occur in the home and can be prevented by providing education on basic food safety practices such as clean, cook, separate, and chill. A descriptive study conducted by Medeiros et al.⁴ surveyed 41 experts in the nutrition field and asked them to rank procedures in the kitchen aimed to reduce pathogens in order of importance. Survey results showed the top four factors identified were maintaining personal hygiene, cooking foods adequately, avoiding cross-contamination, and keeping foods at a safe temperature.⁴ Experts stated when these procedures in the kitchen are followed appropriately, the number of foodborne illness cases will be reduced significantly.⁴ These four safety precautions directly correlate with the four basic safety practices that will be taught to Kids on the Move participants.

If these basic practices (i.e. clean, cook, separate, and chill) are ignored, families can be exposed to foodborne pathogens such as *Salmonella*, *Campylobacter*, *Listeria*, Shiga-toxin producing *E. coli*, and many others. These bacterial pathogens are harmful and can easily contaminate food if proper food handling techniques are not used. Researchers conducted a survey asking participants about different food safety factors.⁵ Participants indicated that after a long day, food preparation and proper food safety keys sometimes were overlooked.⁵ Many participants fell into

“habitual behavior” and took shortcuts to minimize cleaning and cooking time.⁵ These “shortcuts” can cause contamination of foods with harmful foodborne pathogens. According to Parra et al.,⁶ studies have shown that families have limited knowledge on the dangers of cross-contamination and prepare food incorrectly by thawing foods on the counter. This lack of education on the basic principles of food safety needs to be corrected.

Families especially need to be educated on proper food handling procedures when serving high risk populations such as children under the age of five, elderly, immunocompromised individuals, and pregnant women.⁷ These high risk groups amount to one quarter of the U.S. population and severe health outcomes can occur if exposed to improperly handled food.⁷ The early head start program directly works with families that have younger children in the home. Therefore, proper food safety procedures are of great importance because these families include individuals within the high risk category.

Studies have shown that education followed by motivation improves proper food handling behavior in the kitchen and can reduce to occurrence of foodborne illnesses.⁸ By educating KOTM families about these principles and encouraging motivation, food safety practices will become more prominent in the home. Our project will provide families with the knowledge they need in order to help them see the importance of food safety and apply proper food safety techniques into their home.

IV.b. Project Goal & Objectives

Goal: To educate low-income families on the importance of food safety in order to decrease the incidence of foodborne illnesses

Long-term outcome objectives:

1. Positively change at least 70% of families behaviors in utilizing the clean, cook, separate, and chill techniques by December 2014.
2. Positively influence 90% of educators skills and abilities to teach families about proper food safety by December 2014.

Short-term impact objectives:

1. Families participating in Kids on the Move will demonstrate a 60% increase in knowledge related to food safety, specifically how to clean, separate, cook, and chill foods by the end of November 2014.
2. 100% of educators will be able to re-create the lesson for families participating in Kids on the Move by the end of the training session, on October 20, 2014.

Process Objectives:

- 1.1 Develop one 30 minute lesson plan that will be presented to low-income families participating in the program by October 13, 2014.
- 1.2 Prepare 50 fridge magnets that will include important information that was presented in order to help families increase their likeliness to demonstrate these food safety techniques by October 13, 2014.
- 2.1 Make 15 packets containing the lesson plan and materials needed to re-create the lesson for families by October 20, 2014.

2.2 Streak and take pictures of 4 petri dishes and put these picture in the packet for the educators by October 20, 2014.

IV.c. Project Description and Methodology

IV.c.1. Project Overview

Four dietetics students, under the direction of the program coordinator, will be responsible for developing the nutrition education course on food safety related basic food safety techniques of cook, clean, chill, and separate. Initially, one (30 minute) education class will be developed and taught to the teachers of Kids on the Move Early Head Start in order to train them to teach the education class to Kids on the Move participants. Students will have a key role in applying nutrition safety knowledge gained from education courses at Brigham Young University in order to implement a food safety class appropriate for participants of kids on the move. Based on the needs of kids on the move participants, the nutrition education class on food safety will include the topics of:

- *Cook*: Food, especially meats, needs to be cooked completely. Keep hot foods hot and cold foods cold.
- *Clean*: It is important to wash hands, utensils, and cutting boards before and after use with raw meats and eggs.
- *Chill*: It is important to put food in the refrigerator within 2 hours. Be sure to throw out unused leftover food within 5-7 days.
- *Separate*: Keep raw foods, like meat, poultry, and eggs apart from foods that won't be cooked, like fruits, vegetables, and bread.

For an example of the education plan outline, refer to the attached example nutrition education plan.

IV.c.2. Prezi Design

This project was designed base on the Prezi template. In order to capture the audience, the Prezi was created to be interactive and colorful. It will be presented in the education course taught to employees of Kids on the Move and later to the participants. This project will cost \$8.00 an hour, for the students wages, and be limited to five hours. The dietetics students will have the opportunity to utilize skills they have learned throughout their BYU education.

IV.c.3. Packet Creation

This project requires creating a lesson plan that the dietetics students will form based on their knowledge of their Teaching Methods course. It addresses the topics of cook, clean, chill, and separate in simplified terms that will be easily understood by participants of Kids on the Move. Each of the four topics has an interactive piece that will capture the attention of participants and increase the understanding. For “cook”, participants will learn about different cooking temperatures by practicing matching common foods to their proper cooking temperatures. For “clean”, participants will learn the proper hand washing techniques and view petri plates (washed hands, dirty hands, used towel, and sink faucet) that have grown bacteria that is found in common places of the kitchen—this will help increase the desire to keep the kitchen clean. For “chill”, participants will learn how to properly store foods in the refrigerator by completing a matching sheet with common foods and shelves in the refrigerator. For “separate”, participants will view a video created by the USDA that will increase their knowledge about the need to

separate foods. In attention to teaching supplies, each packet will contain fridge magnets that will be given to participants at the end of the lesson to continue awareness on food safety.

IV.d. Evaluation Plan

IV.d. Evaluation Plan

The project will include process and impact/outcome evaluations to determine if the goals and objectives of the project were reached, as described below and as is presented in the attached Logic Model.

IV.d.1. Process Evaluation

One lesson plan will be given to Damian, the program coordinator, in advance in order to approve and translate the lesson. This lesson plan will be given to Damien one week prior to the presentation on October 20, 2014. We will create 50 magnets that will be distributed with the packets on Monday, October 20, 2014. We will monitor the number created and distributed. Fifteen lesson plans will be developed for 15 teachers who teach classes of two to four Kids on the Move Participants. These 15 lesson plans will be distributed among the teachers during our presentation on Monday, October 20th. Pictures will be taken of the four petri plates to create a mini poster and will be included in the lesson plan packet. The number of mini posters, the number of lesson plans, the number of lesson plan packets distributed to teachers, and the number of teachers at the meeting will be recorded.

IV.d.2. Impact/Outcome Evaluation

A post survey will be given to families participating in Kids on the Move. This survey will assess the impact of the lesson on enhancing the knowledge and awareness of food safety and foodborne illnesses. In order to assure that educators understand how to recreate the lesson, teachers will be split into group to practice teaching the lesson. Teachers will be quizzes on the material and lesson plan in order to determine teachers will be able to teach the lesson in the future. We will be present for any questions and will correct any mistakes.

IV.e. Sustainability

All materials developed for this project will be given to the teachers at Kids on the Move and will be used to educate participating families. These lesson plans can be used for years after this project period ends. In addition, online files of all materials were given to Damian if more lesson plans or materials are needed to be reprinted for future use.

V. Budget

V. Budget

V. a. Itemized Budget

DIRECT COST

A. Salaries and Wages

I. Senior Personnel	\$150
II. Undergraduate students: Nutritional Science/Dietetics	\$130
B. Total Salaries and Wages	\$280
C. Equipment	
D. Materials and Supplies	\$13.44
E. Travel	\$15
F. Total Direct Costs (Items B to E)	\$588.44
INDIRECT COSTS (20% of direct costs)	\$118
TOTAL COST	<u>\$706.12</u>

V.b. Budget Narrative

DIRECT COSTS

A. Salaries and Wages

- I. **Senior Personnel:** \$150=1 senior personnel @ \$15/hrs. 10 working hours total. Senior personnel will advise and oversee the project carried out by the students.
- II. **4 Undergraduate students: Nutritional Science/Dietetics:** \$130=4 students @ \$8/hrs. x 2hrs/wk. x 7 weeks. Students will plan and present food safety presentation.

B. Total Salaries and Wages: \$280 (\$150+\$130)

C. Equipment

D. Materials and Supplies

- I. Paper (for client handouts): \$0.65
- II. Magnets (for the back of client handouts, so they can be display on fridge): \$7.79
- III. Laminating materials (to protect the handouts): \$5.00

E. Travel

- I. Gas expenses from traveling to and from Orem = \$15 for half a tank of gas.

F. Total Direct Costs

Total costs for 1 through 6 above equal \$593

INDIRECT COSTS

Indirect Costs equal \$118 (20% of total direct cost)

TOTAL COST

Total Direct and Indirect Costs equal \$706.12 (\$588.44+\$118)

VI. References

1. Kids on The Move. About us. Available at: <http://kotm.org/about/>. Accessed 11/03/14.
2. United States Department of health and Human Services. Healthy People 2020. Available at: <https://www.healthypeople.gov/2020/default>. Accessed 11/03/14.
3. Painter J et al. Attribution of illnesses, hospitalizations, and deaths to food commodities by using outbreak data, United States, 1998-2008. *Emerg Infect Dis.* 2013;19:407-415.
4. Medeiros LC, Kendall P, Hillers V, Chen G, Dimascola S. Identification and classification of consumer food-handling behaviors for food safety education. *J am Diet Assoc.* 2001;101:1326-1332.
5. Fischer AR, De Jong AE, Van Asselt ED, De Jonge R, Frewer LJ, Nauta MJ. Food safety in the domestic environment: An interdisciplinary investigation of microbial hazards during food preparation. *Risk Anal.* 2007;27(4):1065-1082.
6. Para PA, Kim HK, Shapiro MA, Gravani R, Bradley SD. Home food safety knowledge, risk perception, and practices among Mexican-Americans. *Food Control.* 2014;37:115-125.
7. Wilcock A, Pun M, Khanona J, Aung M. Consumer attitudes, knowledge and behaviour: a review of food safety issues. *Trends Food Sci Tech.* 2004;15(2):56-66.
8. Bryd-Bredbenner C, Berning J, Martin-Biggers J, Quick V. Food safety in home kitchens: a synthesis of the literature. *Int J Environ Res Public Health.* 2013;10:4060-4085.