

I. Project Title: Army/National Guard Sport Nutrition Project: Dietary Assessments and Nutrition Education

II. Abstract

The United States armed forces, including the National Guard, are losing individuals with valuable training due to their impaired health status. There is a knowledge deficit in the basic skills necessary to choose and create balanced meals to maintain optimal physical health. We will establish a sports nutrition program for the National Guard that will take place at Camp San Luis Obispo and Cal Poly. The sports nutrition project for the California National Guard aims to establish an effective nutrition education program for service personnel. This will be achieved by following successful education models for eliciting lifestyle changes. Baseline food intake will be collected from the subjects to document their current habits. Next, they will be invited to lessons about basic nutrition principals appropriate for their lifestyle. Cooking classes will follow to provide a hands-on demonstration on ingredient prepping, food safety, and cooking. As follow up, a “Make your own balanced meal” activity and a short quiz will be given to assess their ability to create and choose nutritious meals at home. Our team will call the subjects every other month to collect three 24-hour dietary recalls. At the start and end of the 6 month period, 3-day food recalls will be attained and analyzed. The collected dietary data will be analyzed and results will be provided for the individuals. With this information we will be able to monitor the impact of the education on motivating nutrition lifestyle changes. The goal of this project is to provide these individuals with the knowledge and support to make positive lifestyle changes, and to decrease the overall number of overweight individuals among the ranks. Hopefully, data from this study will be used to establish a long-term cooperative relationship between the Army/National Guard and the Cal Poly Nutrition program in building a program that becomes a national model.

III. Introduction

Army personnel that train the California National Guard expressed concern over preliminary data showing a lack of physical health among their service personnel. It is thought that this shortcoming in physical competence, and health, is due to a poor standard of nutritional care among the ranks. The severity of this issue was demonstrated in a study released by *The Obesity Research Journal* in March 2015. By examining 1,741,070 military recruits between years 1989 to 2012 showed that the incidence of overweight recruits rose by 12.1%, and the rate obesity rose by nearly 8% among recruits (Hruby, et al, 2015). According to the 2011 Health Related Behaviors Survey of Active Duty Military Personnel, over 50% of military personnel are overweight, according to the standards set by the Healthy People 2020 objectives. It was also found that military servicemen and women reported a lower intake of “key healthy foods” such as fruit, vegetables, and whole grains than recommended by the Healthy People standards (Barlas, Higgins, Pflieger, Diecker, 2013). These findings provide concern and reason to implement an effective nutrition education program in the California branch of our National Guard that can eventually be applied nationally within the National Guard.

Based on these studies and the information provided by the Army/California National Guard, we have concluded that further investigation must take place to determine the basic nutrition knowledge and skills of these service men and women. This background is significant in demonstrating that the health and ability of our armed forces greatly depends on their adequate nutritional intake. In connection to this, it has been shown that lack of understanding of food and cooking often leads to poor nutritional habits. With this in mind, it is imperative that we assess the baseline intake of these individuals, determine their current nutritional knowledge, and work with them to provide cooking skills and confidence. In doing so we hope to provide them with the skills needed to both choose, and create their own healthy food choices to increase their nutritional status. This project is important because providing Army/National Guard personnel with proper nutrition education will ensure higher physical performance and fewer resignations due to a lack of health. This project will provide Cal Poly students with the chance to work in collaboration with the National Guard, to

construct and apply a nutrition knowledge lesson, to evaluate the effectiveness of the given lesson, and to be held responsible for communicating with the subjects throughout the duration of the project.

IV. Objectives

The National Guard has presented a problem of unsatisfactory physical and nutritional status of their personnel related to a nutrition knowledge deficit as evidenced by preliminary data collected through survey. In response we have devised specific, measureable objectives for the subjects to achieve, thus resolving the presented problem:

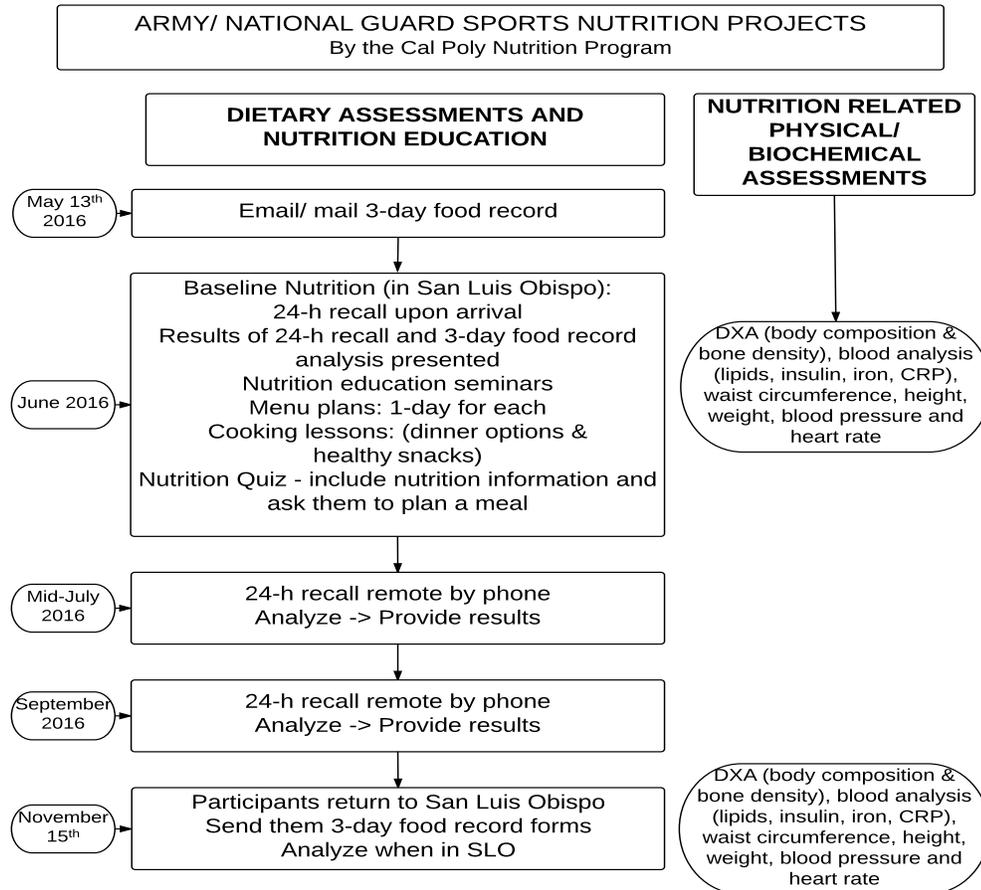
1. Subject will be able to demonstrate an understanding of basic nutrition concepts: identification of food groups, and calculation of daily calorie and protein needs.
2. Subject will demonstrate the ability to prepare ahead of time by creating a three-day grocery-shopping list based on their preferences and nutrient needs.
3. Learner will construct one-day sample menu based on myplate guidelines. The provided hands-on cooking lessons will offer them with the skills they need to create these meals at home.
4. Learner will use the given knowledge and tools for their future planning of meals, thus increasing their nutritional status leading to an increase in overall physical ability as the result.
5. Learners will associate changes in their diet with physical and health assessment outcomes obtained in a parallel study.

V. Methodology

Specific steps to achieve objectives:

1. Students will create a “how to” video demonstrating how to properly record food items, how to measure portions, and how to fill out dietary recalls and food records. Video will be available for subjects to access.
2. Mail the 30 subjects a 3-day food record. Nutrition majors at Cal Poly will evaluate using ESHA (food analysis software) to determine their current intake.
3. Website will be available for subjects to communicate, receive nutrition tips, and to be reminded/contacted in regards to the program. Continual contact aims to decrease attrition rates.
4. Gather baseline nutritional status through another 3-day food record.
5. Create each subject an ideal 1-day meal plan based on his or her preferences, and fitting his or her daily nutritional needs.
6. Provide nutrition lessons about basic nutrition concepts and cooking skills. Further imbed this knowledge by hosting a cooking session allowing each person to cook 2 dinner recipes as well as on-the-go healthy snacks.
7. Administer a quiz which includes:
 - a. Nutrition information review
 - b. “Make your own balanced meal” worksheet
8. Gather second 24-hour dietary recall over the phone. Analyze and provide results.
9. Gather third 24-hour dietary recall over the phone. Analyze and provide results.
10. Mail out the second 3-day food record forms. Analyze and provide results in person upon their return to San Luis Obispo

VI. Timeline



VII. Final Products and Dissemination

Results may be used to develop a model to improve the nutrition and health of military personnel. The model could build a long-term bridge that would help the military personnel pass physical and health evaluations thereby improving retention rates. Cal Poly students would obtain valuable experience and data that may be used for publications in research journals to help obtain future funding for expansion projects.

VIII. Budget Justification

1. Meals: 30 servings each
 - a. Two Dinners provided during cooking classes: \$600
 - Teriyaki Salmon: Salmon fillets, teriyaki sauce, olive oil, brown rice, green beans, mushrooms + condiments and spices
 - Lemon Rosemary Chicken: Chicken breasts, lemon juice, olive oil, spices, sweet potatoes, broccoli + condiments and spices
 - b. Snack recipes (two provided at Cal Poly + two sent to Camp): \$500
 - Trail Mix: almonds, walnuts, dried fruit, pretzels
 - String Cheese + Apples
 - Drinks + Miscellaneous: \$100
2. Apparel: \$200
 - a. T-Shirts and hat incentives for cooking classes and nutrition knowledge quizzes.
3. Mailing supplies and questionnaires: \$200
 - a. Envelopes + stamps to mail out food frequency questionnaires, 24 hour for recall sheets and menu plans.
Paper + ink
 - b. Total: \$1600.00

PROPOSAL BUDGET

Student Applicant(s): Delainey Womack, Selena Sharpless, Kira Minot, Sofia Sanchez Porush	
Faculty Advisor: Dr. Scott Reaves	
Project Title: Army/National Guard Sport Nutrition Project: Dietary Assessments and Nutrition Education	Requested Endowment Funding
Travel <i>subtotal</i>	\$0
Travel: In-state	\$0
Travel: Out-of-state	\$0
Travel: International	\$0
Operating Expenses <i>subtotal</i>	\$
Non-computer Supplies & Materials	\$ 1,400
Computer Supplies & Materials	\$
Software/Software Licenses	\$
Printing/Duplication	\$100
Postage/Shipping	\$100
Registration	\$
Membership Dues & Subscriptions	\$
Multimedia Services	\$
Advertising	\$
Journal Publication Costs	\$
Contractual Services <i>subtotal</i>	\$
Contracted Services	\$
Equipment Rental/Lease Agreements	\$
Service/Maintenance Agreements	\$
TOTAL	\$ 1,600

CAL POLY

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San Luis Obispo, CA 93407-0258
Food Science and Nutrition Department
(805) 756-2660

April 25, 2016

Baker and Koob Endowments Selection Committee
Cal Poly State University
San Luis Obispo, CA 93407

Dear Selection Committee:

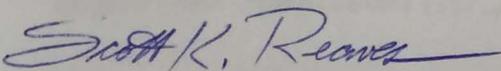
It is an absolute pleasure to have this opportunity to write in support of the application of Delainey Womack and her other team members. Ms. Womack was a student of mine in FSN 328 Nutrient Metabolism I and FSN 329 Nutrient Metabolism II. FSN 328 and FSN 329 and their lab, study the metabolism and biochemistry of the macro- and micronutrients. Ms. Womack is also a Research Assistant on one of my sports nutrition research projects. As a result I am familiar and very impressed with her abilities as a student as well as her personality.

I thoroughly enjoyed having Delainey in my Nutrition classes because of her personality and desire to learn. Her performance on exams, quizzes and assignments in each classes was excellent. She consistently demonstrated her mastery of important concepts and details of the classes. Her desire to learn was obvious because of her meticulous preparation for exams, lab experiments and lab reports. Overall, I was so impressed by her class and lab performance and personality that I asked her to assist on my research project.

I believe Delainey would be a very worthy recipient of a Baker and Koob Endowment. She exemplifies a talented and hard-working student that makes great sacrifices to enhance her education and she does everything possible to prepare herself for success. For example, in January 2015 I planned and began a new sports nutrition project with the Cal Poly Baseball Team. Delainey was one of two students that I asked to help because I had complete confidence in her abilities. I could not be more pleased and grateful for Delainey's exemplary work on the project and it is progressing extremely well. The project she has proposed with the National Guard personnel would be a wonderful opportunity for her to gain additional experience and most importantly continue to develop leadership skills. The other students on the project are all high quality students with great personalities so Delainey has a wonderful group to work with. In addition, she would gain experience working with the Army Personnel that organize and facilitate the training of the National Guard Personnel. In this scenario, Delainey and her team will gain experience from start to finish of a project that should result in being part of a scientific publication(s). They will be able to use information they have learned in our Nutrition Program to help improve the health and well-being of a lot of other people. If this becomes an ongoing relationship, they will have paved the way for future students

In summary, Ms. Womack has a wonderful personality, a very strong work ethic and excellent intellectual ability. I believe the combination of her abilities, tremendous potential and a Baker Koob Endowment will result in Delainey and her team making a significant contributions to improve the lives of others. Therefore, it is with the highest enthusiasm that I recommend Delainey Womack for an endowment award. Please do not hesitate to contact me if you would like to discuss this further.

Sincerely,



Scott K. Reeves, Ph.D.
Professor, Nutrition