PROJECT NO: New

TITLE: An Educational and Marketing Campaign to Disseminate Evidence-Based Knowledge of Hard White Wheat to School-Aged Children, Parents, Teachers, Food Service Professionals, and Registered Dietitian Nutritionists (RDNs)

PERSONNEL: PI – Dr. Samantha Ramsay, RDN, LD

The graduate assistant will assist the PI, Dr. Ramsay and lead in the development and delivery of the education and marketing campaign. The graduate student will organize the education delivery to school aged children, food service professionals, RDNs, and social media delivery.

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JUSTIFICATION: Preliminary results from the 2014-2015 IWC project demonstrated greater preference for Hard White Wheat (HWW) versus Hard Red Wheat (HRW) in young children. Similar results are expected in the 2015-2016 IWC project, which focuses on a sample of more diverse families from a low income and those who demonstrate limited whole grain consumption. Even with the evidence of a greater preference for wheat products made from HWW, consumers have limited knowledge of different whole wheat varieties and the preference for HWW in young children. Awareness of the higher preference for HWW and increased knowledge of whole wheat varieties supports wheat consumption, and the national effort for whole grain consumption. Increased awareness of HWW can support the Idaho Wheat Commission and consumer demand for more products made from HWW.

HYPOTHESIS & OBJECTIVES: Elementary students, parents, teachers, school food service professionals, and RDNs will have significantly greater knowledge of the nutritional benefits of HWW and significantly greater awareness of children's preference for wheat products made from HWW after the implementation of a school based curriculum, trainings for school food service professionals, and a social media campaign for RDNs.
Objectives:

1. Develop and deliver a curriculum targeted for 3rd and 4th grade school aged children that also educates parents and teachers in select Idaho schools.
2. Develop and deliver a training on the benefits of wheat products made from HWW to be adapted for school food service professionals in the National School Lunch Program and adapted for RDNs in the state of Idaho.
3. Develop a social media campaign and deliver it to RDNs in the state of Idaho to increase knowledge of different wheat varieties and young children's preference for HWW.
4. Deliver the adapted training and develop educational materials for RDNs and parents who are involved in Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) to increase awareness of nutritional benefits and available products using HWW.

PROCEDURES: The primary aim of this proposal is to increase awareness and knowledge in school aged children, parents, teachers, school food service professionals, and RDNs of the nutritional benefits and young children's preference for HWW. Three marketing campaigns will

be utilized to increase awareness and knowledge: school curriculum and education, social media campaign, and WIC education. Educational materials will be developed and outputs for each marketing campaign effort will be gathered. Details are described below.

Objectives 1 & 2: In the summer of 2016 schools will be contacted using existing partnerships through the University of Idaho's Coordinated Program in Dietetics. A curriculum will be developed for the 3rd and 4th grades that presents the nutritional benefits of HWW but also integrates math, science, and taste activities. The curriculum will include information that can be sent home to parents to increase awareness and knowledge of the benefit of HWW and products that use HWW. As teachers will partner with the delivery of the curriculum, their increase in knowledge and awareness will be assessed as well. In addition to the developed curriculum, a training will be developed and delivered to school food service professionals regarding the benefits of HWW, children's preference for HWW, and how to incorporate HWW products into their school lunch program. As part of the community rotation in the Coordinated Program in Dietetics, the curriculum will be delivered in participating Idaho schools (n=10). As part of the school curriculum, children will have the opportunity to participate in taste preference activities and taste different wheat varieties (HWW & HRW). The bread will be made using previously developed protocols and purchased bread machines in the Carmelita Spencer Foods Laboratory. All children will receive handouts with existing recipes, specific brand names, and nutritional information to take home and share with their caregivers. The separate training for school food service professionals will include nutritional information, recipe modifications, taste activities, and an assessment of pre/post knowledge. Training will occur in the fall of 2016-spring of 2017. The number of consumers reached will be measured using the quantity of participating schools, teachers, children, and school food service professionals. Pre/post knowledge will be assessed.

Objectives 3: Evidence-based research, including the 2014-2015 and 2015-2016 IWC projects, information on the nutritional benefit of HWW, and existing recipe ideas will be disseminated to consumers via social media throughout the 2016/2017 year in partnership with the Idaho Academy of Nutrition and Dietetics. Continuous postings and articles (ten) will be submitted to the Idaho Academy of Nutrition and Dietetics blog and Facebook. Five existing recipes and five videos (that will be developed) demonstrating the use of hard white wheat in recipes will be posted to YouTube and other social media sites. The number of consumers reached will be measured by blog, video, and recipe "likes", "hits", "comments", "shares", and "views". Attendance to one Idaho Academy of Nutrition and Dietetics Conferences will include an informational handout about the different wheat varieties, the nutritional benefits to HWW, and the results of the research conducted on children's preference for HWW the last two years.

Objective 4: Collaboration with two WIC clinics in Idaho (one in the North and one in the South) will occur to provide education to RDNs and nutrition professionals who offer education to low-income mothers participating in the WIC program. The training and handouts developed for food service professionals will be adapted for RDNs, and will be distributed to WIC clinics in Boise and Coeur d' Alene. All materials will be available for further distribution in other Idaho WIC clinics throughout the state. The number of RDNs and nutrition professionals at each clinic

(n=20) and families (WIC served 34,000 Idahoans last year) will be used to determine the number of consumers reached.

The development and implementation of the curriculum and trainings will be analyzed and descriptive data will be reported. Increased knowledge of the different wheat varieties and awareness of young children's preference for HWW will be reported using descriptive data and non-parametric tests.

DURATION: One year

COOPERATION: The Family and Consumer Sciences academic unit involved in the project will be the Food and Nutrition Program that includes the Coordinated Program in Dietetics. Continued collaboration with Katherine O'Brien and Rueben McLean for access to Idaho flour will be maintained. Rachelle Ausman, the Idaho Academy of Nutrition and Dietetics Social Media Chair, the Directors (i.e. Kimberly Young) from two WIC clinics in Idaho and program directors (i.e. Dr. Colleen Fillmore) from the State Board of Education will be collaborators.

ANTICIPATED BENEFITS/EXPECTED OUTCOMES/INFORMATION TRANSFER: This project will increase awareness and knowledge of different whole grain varieties in school aged children, parents, teachers, school food service professionals, and RDNs in Idaho. Consumers will gain an understanding of different wheat varieties and the nutritional benefits of HWW, as well as the evidence of young children's preference for HWW based on previous research conducted in the last two years. This awareness and knowledge could lead to increased demand for HWW, and reinforce a greater production and availability of products made with HWW that also will support national health initiatives to increase whole grain consumption.

LITERATURE REVIEW: Children and adults have distinct taste preferences (Birch, McPhee, Shoba, Pirok, & Steinberg, 1987). Generally, children prefer sweet and salty to bitter and sour tastes (Steiner, 1979). Whole grain products, such as the hard red wheat have a more bitter taste and could impact children's consumption. Hard white wheat does not have as much of a bitter taste and thus is preferred by children (Keeney, et al. 2015). Children who consume whole grain bread products from the hard white wheat get the benefit of consuming whole grain that is supportive of health. It is the role of nationally credentialed dietetic professional (RDN) to advocate for and promote comprehensive, science-based nutrition information to the public, and function as the leading nutrition educators to other health professionals. The media are the consumers' leading source of nutrition information (Ayoob, Duyff, & Quagliani, 2002), and RDNs have a gap to fill by providing consumers with science-based nutrition information. Social media can be a quick, low-cost, direct way to reach target audiences (Tobey & Manore, 2014). It has become a fundamental piece of everyday life for over one billion people worldwide (Pillow, et al, 2013). Social media is increasingly accessible across the United States regardless of education, income, race or ethnicity (Tashara et al, 2014). Social media sites such as YouTube, Facebook, Pinterest, and Instagram allow people to create, share, and exchange information, and ideas, and is a channel for nutrition education (Tobey & Manore, 2014).

REFERENCES:

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Keeney, L.J., Gol Mohamadi, A., Tsao, L., Planck, S., Ramsay, S.A. Identification of preferences for hard white wheat, hard red wheat and non-whole grain bread products in young children and their parents. *Journal of the Academy of Nutrition and Dietetics*, 2015, 115, A-62.

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IDAHO WHEAT COMMISSION - BUDGET FORM

Allocated by	Idaho Wheat Commission	during FY 2015	$	-
Allocated by	Idaho Wheat Commission	during FY 2016	$	-

REQUESTED FY 2016 SUPPORT:

	Salary	Temporary Help	Fringe	Travel	OE	Graduate Tuition/Fees	TOTALS
Idaho Wheat Commission	$ 13,600	$ -	$ 340	$ 3,000	$ 2,000	$ 10,126	$ 29,066

OTHER RESOURCES (not considered cost sharing or match):

TOTAL OTHER RESOURCES	$	-

TOTAL PROJECT ESTIMATE FOR FY 2017:	$ 29,066 *(Requested)*	$ - *(Other)*	$ 29,066 *(Total)*

BREAKDOWN FOR MULTIPLE SUB-BUDGETS:

	(PI name)	*(PI name)*	*(PI name)*	*(PI name)*
Salary	$ -	$ -	$ -	$ -
Temporary Help	$ -	$ -	$ -	$ -
Fringe Benefits	$ -	$ -	$ -	$ -
Travel	$ -	$ -	$ -	$ -
Operating Expenses	$ -	$ -	$ -	$ -
Graduate Student Tuition/Fees	$ -	$ -	$ -	$ -
TOTALS	$ -	$ -	$ -	$ -

Total Sub-budgets	$ -

***$24,066 is requested to cover one graduate students for 20 pay periods.**
****Fringe is 2.5% for the one graduate student.**
*****Travel is for the PI and graduate student to attend a conference at $2,000 and travel for graduate student to conduct trainings $1,000**
******Operating expenses include compensation for school classrooms, WIC, and use of website 13x$100 ($1300), Stat support $300, printing costs $400**
10.7.2015 - Version