

<b>Title:</b>	<b>GROW Healthy Kids and Communities: Generating Rural Opportunities for Weight-Healthy Kids and Communities</b>		
<b>Sponsoring Agency</b>	NIFA	<b>Project Status</b>	CHANGED
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<b>Submitted By</b>	Deborah John	<b>Date Submitted to NIFA</b>	05/07/2014

**Program Code:** A2101

**Program Name:** Childhood Obesity Prevention: Integrated

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**Non-Technical Summary**

The problem of obesity in children is in the forefront of research efforts across disciplines. A plethora of data support that physical health outcomes such as metabolic, orthopedic, pulmonary and endocrine conditions and mental health outcomes such as sleep disorders, social exclusion, and depression are associated with obesity, and data are emerging that suggest childhood obesity is associated with poor academic performance. Many risk factors have been associated with children being overweight or obese, including rural residency. Attributes of the rural environment make it difficult for children to access and eat healthy foods, walk or bike to destinations and participate in physical activity and recreational sport programs. Furthermore, features of rural schools, particularly those in under-resourced communities, are such that students often face long bus commutes, minimal/no provision of health and physical education by certified teachers, and few resources to support health and/or enrich the academic environment. Rural community features pose unique challenges for rural residents that differ from those faced by individuals residing in more metropolitan regions. Nevertheless most evidence-based strategies to combat obesity have been developed and tested in non-rural settings. The overarching goal of the Generating Rural Options for Weight-Healthy Kids & Communities (GROW HKC) project is to prevent obesity in rural children. Toward this end, we will take a solution-focused, two-pronged approach. Our first aim is to understand the rural obesogenic environment. To do so Oregon State University (OSU) will partner with Extension Services in six Western States to engage rural people in community-based participatory research efforts to (1) assess features of rural communities that are viewed as obesity preventing/promoting, community resources and readiness to implement and support environmentally-based obesity prevention efforts, (2) create a database to aggregate the data from community assessments, and (3) develop a new eXtension Community of Practice as a vehicle to help practitioners and the public learn from our research findings. Our second aim is to plan, implement, and evaluate a multi-level intervention targeting rural home, school, and community behavioral settings to promote healthful eating and increase physical activity, and thus improve body mass index among rural children aged 5-8 years old (grades K-3). Toward this end, we will develop and test the GROW HKC obesity prevention program in rural communities from three counties in Oregon. Applying a "people and places" framework, our intervention will utilize evidence-based strategies to affect positive changes in person-level attributes and in family home, school, and community environments related to healthful eating and physical activity.

**Accomplishments**

**Major goals of the project**

The goal of the Generating Rural Opportunities for Weight-Healthy Kids & Communities (GROW HKC) project is to prevent obesity in rural children. We will take a two pronged approach. Our first aim is to understand the rural obesogenic environment. To do so Oregon State University (OSU) will partner with Extension Services in six Western States to engage rural people in community-based participatory research efforts to: (Objective 1) assess features of rural communities that are

viewed as obesity preventing/promoting, measure community resources and readiness to implement and support environmentally-based obesity prevention efforts, create a database to model the data from community assessments, and (Objective 2) develop a new eXtension Community of Practice as a vehicle to help practitioners and the public learn from our research findings. OUTPUTS: Initial outputs of Aim One activities will be addressed during project years 1-2 and will include: GROW HKC community-campus teams and trainers in Oregon and partnering Western states, community profile and plan inventory including narrative maps and environmental attributes, and an eXtension CoP interested in rural obesity prevention. Our second aim is to plan, implement, and evaluate a multi-level intervention targeting rural home, school, and community behavioral settings to promote healthful eating and increase physical activity, and thus improve body mass index among rural children aged 5-8 years old (grades K-3). Toward this end, we will develop and test the GROW HKC obesity prevention program in rural communities from three geographically diverse counties in Oregon. Our intervention will employ a "people and places" framework and utilize evidence-based strategies to affect positive changes in person-level attributes and in family home, school, and community environments related to healthful eating and physical activity. Aim 2 objectives include implementing and evaluating a comprehensive multi-level intervention (Objective 3) to promote healthy eating and increase physical activity on obesity (change in BMI) among rural kindergarten through 3rd grade children, and (Objective 4) to increase supports and remove barriers in home, school, and community food and physical activity environments. OUTPUTS: Outputs of Aim Two activities include: 1) improved children's knowledge, skills, dispositions, and healthful eating and physical activity behaviors; and 2) families, schools, and communities use GROW HKC strategies to improve home, school, and community food and physical activity environment. Long-term outcome of Aim Two is no change or improved BMI scores in rural children grades K-3.

### **What was accomplished under these goals?**

**AIM 1 Outcomes in PY 2** include five HEAL MAPPS reports that have been provided to communities to support community-based initiatives to prevent childhood obesity.

John, DH & Gunter, KB (2012). Philomath, OR HEAL MAPPS Community Report. Soda vending machines were removed from Boys and Girls club.

Rudolph, J, Etuk, L, John, DJ, Gunter, KB, (2012). Clatskanie, OR HEAL MAPPS Community Report. Clatskanie, OR secured a **\$5,000 Youth Advocates for Health (YA4-HI) grant** to promote youth involvement in healthy eating, active living (HEAL) through community gardens.

Case, P, Wayne, L, Etuk, L, John, DJ, Gunter, KB, (2012). Bonanza, OR HEAL MAPPS Community Report. **Bonanza, OR received \$500 to supplement healthy foods** at the elementary school food services

Halverson, B, Sterrett, K, Etuk, L, John, DJ, Gunter, KB, (2012). Molalla, OR HEAL MAPPS Community Report. Molalla was the recipient of an **\$8,000 HEAL grant from Clackamas County DHHS to support the development of a walking/running trail** on Molalla elementary property. The project includes a joint use agreement to allow community access to the trail.

Calodich, S, Etuk, L, John, DJ, Gunter, KB, (2012). Port Townsend, WA HEAL MAPPS Community Report. **Washington State University submitted and was awarded a 2-year, \$50,000 grant to deliver HEAL MAPPS** in rural tribal communities on the Olympia peninsula to improve community health and enhance the local food systems.

**Aim 2 Outcomes in PY 2** Baseline data reporting overweight and obesity prevalence in the elementary schools enrolled in the GROW intervention programs. Of the 1920 children assessed in grades k-6, 36% were overweight (having BMI values for their age and gender > the 85th percentile); 19% were obese (having BMI values for their age and gender > the 95th percentile). Prevalence did not differ by age, but a greater proportion of children in older grades (3rd-6th) were classified as overweight and obese. Reports were generated and shared with each participating school justifying the need to improve the school context for obesity prevention.

### **What opportunities for training and professional development has the project provided?**

Major collaborators and partners have participated in training and professional development, including those from: University of Nevada, Extension; University of Arizona Extension; Washington State University Extension; Texas A&M Extension; New Mexico State University Extension; Colorado State University Extension; Oregon State University SNAP Ed Program; Oregon Department of Health - Health Authority; Oregon State University Extension Family & Community Health and 4H Programs; Clatskanie and Rainier Elementary School Teachers, Columbia County; Molalla and Estacada Elementary School Teachers, Clackamas County; Chiloquin and Bonanza Elementary School Teachers, Klamath County; GeoMobile Innovations Inc. technicians.

Graduate students have been learning through project activities and are conducting research toward the completion of their degrees relative to the project: Patrick Abi-Nader, PhD, Physical Activity and Public Health; Jennifer Jackson, PhD, Public Health. We have engaged undergraduate students (n=2) and MPH students (n=2) in internships.

### **How have the results been disseminated to communities of interest?**

The study rationale, design, and results were disseminated via lectures and invited talks by the PIs to university graduate and undergraduate students, colleagues, and community groups. Methodologies and tools developed through the project were integrated into courses taught by the PIs, and shared through workshops delivered to Extension personnel. The HEAL MAPPS Manual and process has been shared with collaborators on other projects and written in to several successful grant applications as a mechanism to understand environmental factors contributing to healthy eating and physical activity across cultures (e.g. Latino and Native American populations).

Results from HEAL MAPPS and SPAN-ET assessments as well as school-level HWA results providing overweight and obesity prevalence were shared via written reports and oral presentations to community stakeholders and/or school stakeholders. Community-based project activities and events were communicated via media publications, including newspaper, websites, and social media.

**What do you plan to do during the next reporting period to accomplish the goals?**

{Nothing to report}

**Participants**

**Actual FTEs for this Reporting Period**

Role	Faculty and Non-Students	Students within Staffing Roles			Computed Total by Role
		Undergraduate	Graduate	Post-Doctorate	
Scientist	1.4	0.5	1.5	0	3.4
Professional	3.8	0	0	0	3.8
Technical	1	0	0	0	1
Administrative	1	0	0	0	1
Other	0.5	0	0	0	0.5
Computed Total	7.7	0.5	1.5	0	9.7

**Target Audience**

Extension lead research partners from AZ, CO, NM, NV, TX, WA (n=6) and Oregon (n=6) and Washington (n=4) Extension educators completed train-the-trainer workshops (June 18-20, July 30-Aug 3, and Nov 15-16, respectively) to conduct HEAL MAPPS (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys; developed with this funding) community-engaged participatory research.

Trained Extension educators implemented HEAL MAPPS in Oregon (n=7) and Washington (n=1) rural communities, engaging rural residents and community stakeholders in issues of weight health and rural place in five distinct community events: stakeholder engagement, MAPPS training, focus group, community conversation, and results reporting.

Trained Extension educators (n=6) engaged school administrators and staff (n=24) in rural elementary schools (n=3) in participatory assessments of the school nutrition and physical activity environments using the School Nutrition and Physical Activity (SNPA) Environmental Assessment Tool (developed with this funding).

Trained Extension scientists and educators (n=9) collected whole school height and weight data in Oregon elementary schools (n=6) on 1,920 children in kindergarten through grade 6 (n=1061 boys; n=859 girls) using assessment methods developed with this funding.

**Products**

Type	Status	Year Published	NIFA Support Acknowledged
Websites	Published	2012	YES

**Citation**

John, DH, Gunter, KB, Hicks, J (2012) GROW Healthy Kids and Communities. Available at: <http://extension.oregonstate.edu/growhkc/>

Type	Status	Year Published	NIFA Support Acknowledged
Other	Published	2012	YES

**Citation**

John DH, Gunter, KB, Etuk, E (2012). HEAL MAPPS Toolkit Training Manual. Oregon State University: Corvallis, OR.

**Other Products****Product Type**

Protocols

**Description**

Height and Weight Assessment protocol for conducting school-based assessments by trained research and field staff

**Product Type**

Survey Instruments

**Description**

Family Stage of Change (FSOC) survey to assess family unit's readiness to change family-level behaviors and family home environmental characteristics related to healthy eating and physical activity.

**Product Type**

Other

**Description**

Field data transfer and processing application for Garmin GPS units used in HEAL MAPPS processes intersection with ArcGIS were developed by GeoMobile Innovations Inc. specifically for our project.

**Product Type**

Evaluation Instruments

**Description**

School Physical Activity and Nutrition Environmental Tool (SPAN-ET) was developed to assess school resources and readiness to improve nutrition and physical activity environments, suggest appropriate improvement strategies, and score impacts resulting from environmentally-based treatments.

**Product Type**

Educational Aids or Curricula

**Description**

Balanced Energy Physical Activity (BEPA) Tool Kit was developed and funded through this grant in partnership with Oregon's Supplemental Nutrition Assistance Program Education. This curriculum and associated tool kit was developed to support nutrition educators, teachers, and caregivers of elementary aged children to support their ability to provide integrated physical activity opportunities and nutrition education into every direct delivery occasion with elementary aged children.

**Changes/Problems**

{Nothing to report}