

Title:	GROW Healthy Kids and Communities: Generating Rural Opportunities for Weight-Healthy Kids and Communities		
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Program Name: Childhood Obesity Prevention: Integrated

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Recipient Organization

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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 3 include Community and School environmental assessment reports that have been provided to communities to support community- and school-based initiatives to prevent childhood obesity.

- John, D, Winfield, T, Ghavami, A, Gunter, K. (2014). Molalla Community Food and Physical Activity Environmental Resource Spatial Audit Report.
- John, D, Winfield, T, Ghavami, A, Gunter, K. (2014). Estacada Community Food and Physical Activity Environmental Resource Spatial Audit Report.
- John, D, Winfield, T, Ghavami, A, Gunter, K. (2014). Clatskanie Community Food and Physical Activity Environmental Resource Spatial Audit Report.
- John, D, Winfield, T, Ghavami, A, Gunter, K. (2014). Rainier Community Food and Physical Activity Environmental Resource Spatial Audit Report.
- John, D, Winfield, T, Ghavami, A, Gunter, K. (2014). Bonanza Community Food and Physical Activity Environmental Resource Spatial Audit Report.
- John, D, Winfield, T, Ghavami, A, Gunter, K. (2014). Chiloquin Community Food and Physical Activity Environmental Resource Spatial Audit Report.
- Jackson, J, John, D, Gunter, K. (2013). School Physical Activity and Nutrition Environmental Assessment (SPAN-ET) Report: Molalla Elementary
- Jackson, J, John, D, Gunter, K. (2013). School Physical Activity and Nutrition Environmental Assessment (SPAN-ET) Report: Clackamas River Elementary (Estacada)
- Jackson, J, John, D, Gunter, K. (2013). School Physical Activity and Nutrition Environmental Assessment (SPAN-ET) Report: Clatskanie Elementary
- Jackson, J, John, D, Gunter, K. (2013). School Physical Activity and Nutrition Environmental Assessment (SPAN-ET) Report: Hudson Park Elementary (Rainier)
- Jackson, J, John, D, Gunter, K. (2013). School Physical Activity and Nutrition Environmental Assessment (SPAN-ET) Report: Bonanza Elementary
- Jackson, J, John, D, Gunter, K. (2013). School Physical Activity and Nutrition Environmental Assessment (SPAN-ET) Report: Chiloquin Elementary
- Gunter, K, Abi-Nader, P, Klein, B, John, D. (2013). Promoting Healthy Active Schools: Molalla Elementary School Physical Activity and Nutrition Baseline Report.
- Gunter, K, Abi-Nader, P, Klein, B, John, D. (2013). Promoting Healthy Active Schools: Clackamas River Elementary School Physical Activity and Nutrition Baseline Report.
- Gunter, K, Abi-Nader, P, Klein, B, John, D. (2013). Promoting Healthy Active Schools: Hudson Park Elementary School Physical Activity and Nutrition Baseline Report.
- Gunter, K, Abi-Nader, P, Klein, B, John, D. (2013). Promoting Healthy Active Schools: Clatskanie Elementary School Physical Activity and Nutrition Baseline Report.
- Gunter, K, Abi-Nader, P, Klein, B, John, D. (2013). Promoting Healthy Active Schools: Bonanza Elementary School Physical Activity and Nutrition Baseline Report.
- Gunter, K, Abi-Nader, P, Klein, B, John, D. (2013). Promoting Healthy Active Schools: Chiloquin Elementary School Physical Activity and Nutrition Baseline Report.

SIGNIFICANT IMPACTS resulting from these outcomes include **grants totaling \$124, 205** that were submitted by communities with support from GROW project staff and based on information gained in the HEAL MAPPS and/or SPAN-ET. All listed grants were submitted and awarded between January 2013 and January 30, 2014.

- Molalla Community; General Mills Champions Grant, January 2013, \$10,000 Trail Project
http://www.generalmills.com/Responsibility/Community_Engagement/Grants/Champions_for_healthy_kids.aspx
- Molalla Elementary School; Playworks (April of 2013). \$2500 (Title 1 25%; Kaiser Permanente grant 75%)
- Molalla Elementary School; Fuel up and Play 60 Oregon Dairy Council \$4,000
- Molalla Elementary School; Active Schools Acceleration Project \$1000
- Molalla Community; Bear Creek Byway project (Safe way to Safeway walking route)-\$8000 HEAL grant (Project of the Ford Leadership Group, but the community recognized the need during the HEAL Mapps process)
- Molalla Community; Molalla River Academy HEAL grant \$8000, awarded to charter school for a new fitness trail.
- Clatskanie School District – Farm-to-School \$20,400
- Molalla River School District – Farm-to-School \$70, 305

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

The following 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; Alinna Ghavami, MPH, Public Health. We have engaged undergraduate students (n=12) and MPH students (n=1) through internships and university research programs in physical activity assessment, BEPA toolkit implementation, We have delivered trainings to OSU Extension educators (n=35), and state health department partners about HEAL MAPPS, the Rural Community Food and Physical Activity Resource Audit and the application of the SPAN-ET in several training workshops.

- **R-CFPAR (Rural Community Food and Physical Activity Resource) Audit** serves as an engagement, assessment and intervention tool, documenting the geographic location of and conditions of access and cost for all available food and physical activity resources within a community. The R-CFPAR Audit establishes a baseline measure of system resource availability and spatial distribution, and features of access and costs, which can be used to identify and prioritize improvements the food and/or activity system and, when repeated, show how the community food and physical activity environment changes over time. One practitioner and 6 community trainings were conducted.
- **SPAN-ET (School Physical Activity and Nutrition Environment Tool) and HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys)** training materials, presentations, and program tools were created for field-based practitioners with Oregon State University Extension Service. Three practitioner trainings were conducted.
- **Physical Activity Assessment** trainings and materials were developed, field based practitioners and school partners were trained during 3 trainings.
- **BEPA Toolkit** trainings were conducted to train GROW field staff (one training) to train elementary school teachers (3 trainings) to use the toolkit to promote active learning.

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 professional organizations, 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). The SPAN-ET Manual and processes have been shared with OSU Extension and SNAP Ed partners and will be incorporated into the SNAP Ed 2014-2015 plan. Information about our measures, approaches and findings have been shared at conferences, symposia and workshops and through web-based distribution of materials.

Presentations

- Gunter, K. Exercise is Preventive Medicine, The Community as the Clinic. Oregon State University, Corvallis, OR. **March 2013.**
- John, D, Gunter, K. Jackson, J. Using the School Nutrition and Physical Activity (SNPA) Tool too Assess Resources and Readiness for Changing the Environmental Context. Oregon State University Extension FCH-4H Joint Conference, Wilsonville, OR, **March 2013.**
- Abi Nader, P, Jackson, J. Generating Rural Options for Weight-Healthy Kids & Communities (GROW HKC). Oregon State University, **May 2013.**
- John, D. Preventing Obesity in the Rural West: Making Connections through Research, Education, and Extension. Western Region Extension Joint Summer Meeting, Coeur d'Alene, ID, **July 2013.**
- John, D, Jackson, J. Generating Rural Options for Weight-Healthy Kids & Communities. Wellness in School

Environments (WISE), Portland, OR. **July 2013.**

- John, D, Gunter, K, Manore, M, Langelotto, G, Etuk, L. Generating Rural Options for Weight Healthy Kids & Communities. NIFA Project Directors Meeting, Society for Nutrition Education & Behavior Annual Conference, Portland, OR. **August 2013.**

- John, D, Gunter, K, Jackson, J. Preventing Obesity among Rural Children - Changing the Context is Key. Panel Discussion. Oregon Public Health Association Annual Conference, Corvallis, OR. **October 2013.**

- Gunter, KB, Abi-Nader, P, John, DH. Understanding Family Readiness for Behavior Change: Development of the Family Stage of Change Measure. Oregon Public Health Association Annual Conference, Corvallis, OR. **October 2013.**

- Jackson, J, Gunter, KB. Associations between Family Nutrition and Physical Activity Behaviors and Successful Learning Characteristics in Elementary School Children. Oregon Public Health Association Annual Conference, Corvallis, OR. **October 2013.**

- Dodge Vera, T., John, D. Using HEAL MAPPS to build community capacity among Latinos. Oregon Public Health Association Annual Conference, Corvallis, OR. **October 2013.**

- John D, Gunter, K. Jackson, J. Measuring the School Nutrition and Physical Activity Environment: A Case for Assessing School Resources and Readiness for Changing the Context to Address Child Obesity. American Public Health Association National Conference, Boston, MA. **November 2013.**

- John D, Gunter, K. Preventing Obesity among Rural Children: Improving School Nutrition and Physical Activity Options through Targeted Environmental Actions. USDA-Funded Projects Panel, American Public Health Association National Conference, Boston, MA. **November 2013.**

- John, D. Preventing Obesity in the Rural West: Connecting Research, Education, and Extension. Oregon State University, Corvallis, OR. **June 2013**

Websites

- GROW HKC <http://extension.oregonstate.edu/growhkc/> website was created and is maintained by personnel supported by this grant.

- BEPA website provides free access to the physical activity cards in the BEPA Toolkit as well as videos of select activities for families and teachers: <http://extension.oregonstate.edu/physicalactivity/BEPA>

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

University of Idaho Extension has joined the project, identified rural communities who will participate in the CBPR HEAL MAPPS, and will participate in a HEAL MAPPS training for Extension faculty to facilitate CBPR with/in 3-4 rural communities during 2014-2015 to accomplish Aim 1 goals. We have added Perry Hystad, PhD, Environmental Health and Safety/GIS Analyst as a Co-PD.

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	1.5	0	0	5.3
Technical	2.5	0.5	0.5	0	3.5
Administrative	1	0	0	0	1
Other	0.5	0	0	0	0.5
Computed Total	9.2	2.5	2.0	0	13.7

Target Audience

Target audiences included residents and sector stakeholders from geographically, economically, and ethnically diverse rural communities in the Western United States. In 2013, activities took place in 19 communities in Oregon (n=6), Washington (n=6), New Mexico (n=1), Nevada (n=4), Colorado (n=1), Arizona (n=1). A second target audience included children and families from rural elementary schools (n=6) in three Oregon Counties. All targeted schools were located in rural communities, and over 50% of enrolled students were eligible for free and reduced price meals or free milk.

Products

Type	Status	Year Published	NIFA Support Acknowledged
Other	Published	2013	YES

Citation

John D, Gunter, K, Jackson, J (2013). SPAN-ET™ Training Manual. Oregon State University. Corvallis, OR.

Type	Status	Year Published	NIFA Support Acknowledged
Conference Papers and	Published	2013	YES

Citation

John, D, Gunter, K, Manore, M, Langellotto, G, Etuk, L. Generating Rural Options for Weight Healthy Kids & Communities. Published Abstract. Society for Nutrition Education & Behavior Annual Conference, Portland, OR. August 2013.

Type	Status	Year Published	NIFA Support Acknowledged
Conference Papers and	Published	2013	YES

Citation

John, D, Gunter, K, Jackson, J. Preventing Obesity among Rural Children - Changing the Context is Key. Published Abstract. Oregon Public Health Association Annual Conference, Corvallis, OR. October 2013.

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Citation

Gunter, KB, Abi-Nader, P, John, DH. Understanding Family Readiness for Behavior Change: Development of the Family Stage of Change Measure. Published Abstract. Oregon Public Health Association Annual Conference, Corvallis, OR. October 2013.

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Citation

Jackson, J, Gunter, KB, John, DH. Associations between Family Nutrition and Physical Activity Behaviors and Successful Learning Characteristics in Elementary School Children. Published Abstract. Oregon Public Health Association Annual Conference, Corvallis, OR. October 2013.

Type	Status	Year Published	NIFA Support Acknowledged
Conference Papers and	Published	2013	NO

Citation

Dodge Vera, T., John, D. Using HEAL MAPPS to build community capacity among Latinos. Published Abstract. Oregon Public Health Association Annual Conference, Corvallis, OR. October 2013.

Type	Status	Year Published	NIFA Support Acknowledged
Conference Papers and	Published	2013	YES

Citation

John, D, Gunter, K, Jackson, J. Measuring the School Nutrition and Physical Activity Environment: A Case for Assessing School Resources and Readiness for Changing the Context to Address Child Obesity. Published Abstract. American Public Health Association National Conference, Boston, MA. November 2013.

Type	Status	Year Published	NIFA Support Acknowledged
Conference Papers and	Published	2013	YES

Citation

John D, Gunter, K. Preventing Obesity among Rural Children: Improving School Nutrition and Physical Activity Options through Targeted Environmental Actions. Published Abstract. American Public Health Association National Conference, Boston, MA. November 2013.

Type	Status	Year Published	NIFA Support Acknowledged
Journal Articles	Under Review	2013	YES

Citation

John, D, Jackson, J, Manore, M, Gunter, K. Developing the School Physical Activity and Nutrition-Environment Tool (SPAN-ET) to Measure the School Context for Obesity Prevention. In Review, Journal of School Health.

Type	Status	Year Published	NIFA Support Acknowledged
Journal Articles	Under Review	2013	YES

Citation

Jackson, J, Branscum, A, John, D, Smit, E, Gunter, K. Associations between Family Nutrition and Physical Activity and School Performance. In Review, Journal of School Health.

Type	Status	Year Published	NIFA Support Acknowledged
Journal Articles	Under Review	2013	YES

Citation

Gunter, K, Abi-Nader, P, Klein, B, and John, D. Assessing Family Level Behaviors for Obesity Prevention: Development and Preliminary Validation of the Family Stage of Change Tool. In Review, Journal of Human Sciences and Extension.

Other Products**Product Type**

Evaluation Instruments

Description

The Rural Community Food and Physical Activity Resource Audit was developed and implemented. This instrument serves as an engagement, assessment and intervention tool, documenting the geographic location of and conditions of access and cost for all available food and physical activity resources within a community. The R-CFPA Resource Audit establishes a baseline measure of system resource availability and spatial distribution, and features of access and costs, which can be used to identify and prioritize improvements the food and/or activity system. The audit will also, when repeated, show how the community food and physical activity environment changes over time.

Product Type

Protocols

Description

SPAN-ET (School Physical Activity and Nutrition Environment Tool) and HEAL MAPPS™ (Healthy Eating Active Living: Mapping Attributes using Participatory Photographic Surveys) Training materials, presentations, and program tools were created for field-based practitioners with Oregon State University Extension Service. Three practitioner trainings were conducted.

Product Type

Protocols

Description

Training materials for the school based Physical Activity Assessment protocol were developed and distributed to field based partners during trainings.

Product Type

Educational Aids or Curricula

Description

Train-the-Trainer Training materials for GROW field staff to train teachers to use the BEPA Tool Kit were developed and distributed to field based partners.

Changes/Problems

One multi-state partner, Arizona (University of Arizona Extension) has withdrawn from the research project. Extension educators who were trained to implement HEAL MAPPS as a research tool will utilize HEAL MAPPS Extension educator/practitioner version and participate in a program evaluation.

Lena Etuk has left the project and has been replaced by Perry Hystad, PhD as Co-PD to oversee GIS analyses.