

## ***Together We Grow Healthy: Student Gardens and Healthy Lifestyle Lessons Study***

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Investigators: Barbara Baquero, Mary Burmeister, Trudy Burns, Shelby Francis,  
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### **Overview**

This study uses principles of community-based participatory research (CBPR) to design and translate an integrated elementary-school gardening curriculum from “warmer” geographical areas to Iowa, with its limited growing season. CBPR involves the community as equitable partners in the research process to produce useable and sustainable outcomes within the community. The student garden study was proposed by the Washington County Healthy Communities Coalition which seeks to improve the health of Washington County residents via evidence-based public health strategies. Kathleen Janz is a member of this volunteer-based coalition. For more information about this coalition link to:

<http://washph.com/documents/Obesity%20Goals%20&%20Strategies.pdf>.

### **Specific Aims**

*The primary study aim is to increase the consumption of fruits and vegetables by children.*

Secondary study aims include increasing children's: 1. outdoor everyday physical activity, 2. understanding of food production and preparation, and 3. commitment to soil conservation. Successful implementation of these aims may contribute to children's healthy weight, growth, and development.

### **Study Design and Measures**

This project is an experimental, non-equivalent control trial consisting of two intervention schools (Ainsworth, Lincoln) and a control school (Wellman). Pre- and post- age-appropriate questionnaires are being used to assess primary and secondary impact evaluation measures. The primary impact measure is the consumption of fruits and vegetables. Secondary impact measures include moderate-through-vigorous physical activity, screen time, preference for fruits and vegetables, and knowledge of food production, preparation, and soil conservation.

To fully assess the implementation of the intervention and to aid in future dissemination, we are also conducting an evaluation of process measures. A mixed methods approach consisting of one-on-one interviews and questionnaires with teachers and administrators is being used. These process measures: 1. assess if the training was delivered as intended, 2. assess if key components of the program were implemented as designed, 3. assess teachers'/administrators' satisfaction with the program, and 4. ask teachers/administrators to provide suggestions for improvement.

### **Progress**

The project includes two components: 1. integration of healthy lifestyle lessons throughout the curriculum (reading, mathematics, physical education, etc) and 2. the construction, preparation, and nurturing of student gardens.

We (University of Iowa faculty and students) and Lynn Fisher (Washington County Public Health) have worked with the Washington, Highland, and Wellman (control school) School Districts since summer 2012. Primary contacts have been Jane O'Leary, Principal--Ainsworth Elementary (Highland) and Dave Hoffman, Principal--Lincoln Elementary (Washington).

In the fall 2012, Principals O'Leary and Hoffman committed their entire school faculty to the project; therefore, our first challenge was to increase the scale of the study from our proposed 5<sup>th</sup> grade only to 3<sup>rd</sup> to 5<sup>th</sup> grade for Lincoln and K to 5<sup>th</sup> grade for Ainsworth. This spring 2013, 30 teachers participated in three in-service workshops taught by Katherine Mellen, Lecturer, Dept of Health and Human Physiology, and Scott Koepke, Soil Educator, New Pioneer Co-Op. With the support of Dr. Mellen and UI Health Promotion students, teachers selected lessons on seeds, soil, nutrients, etc. that they then integrated and taught within the standard elementary school curriculum. Teachers also completed brief process evaluations of these lessons as they delivered them. Children have completed baseline impact questionnaires on fruit and vegetable consumption and everyday physical activity patterns. The Lincoln garden has been built by community members and UI faculty and students. The Ainsworth garden is being built by Ainsworth students---it is partially completed. Some plants have been seeded in both gardens.

### **Preliminary Results**

UI faculty and students have participated in 20 work sessions (e.g., planning meetings, data collection, parent open houses, teacher training, garden building).

Healthy Lifestyle lessons are being delivered each week to **353 students in Washington and 48 students in Ainsworth.**

Baseline diet and physical activity impact measures were collected on 210 Lincoln students, 30 Ainsworth students, and 20 Wellman (control) students by Health and Human Physiology Graduate students -- Mary Burmeister and Shelby Francis.

Process evaluation via a short electronic questionnaire is currently being completed by teachers after lessons. Mary Burmeister is overseeing this evaluation component.

A tool kit addressing how to design and implement integrated lifestyle lessons into the elementary school curriculum and build a student garden was written by Health and Human Physiology undergraduate students — Molly McGinnis and McKenzie O'Neill.

### **Plans**

The Washington YMCA day care will tend the Lincoln garden this summer. We are looking for summer support for the Ainsworth garden.

We will re-administer impact questionnaires fall (2013) and late spring (2014). We will continue with the process evaluation fall through spring (2013 to 2014). We will interview teachers and administrators spring 2014. Impact data analysis is planned for summer 2014.

To help ensure financial and labor support for next school year, a flyer and media campaign is being planned by Barbara Baquero, Assistant Professor, Dept of Community and Behavioral Health.

UI students, McKenzie O'Neill and Jessica Merma, at Ainsworth School Parent Night



Garden building at Lincoln (backhoe used so no children allowed) with UI Kathy Janz and Molly McGinnis



Scott Koepke and UI Katherine Mellen teaching at Lincoln.



Garden building Ainsworth



Garden planning at Lincoln with Dave Hoffman and Scot Koepke



Seed selection Ainsworth



"It is important that students understand what nutrients their bodies require to be healthy and where they can get these nutrients. Students also need to understand how we care for the soil effects the nutrients available in our foods."

-Jane O'Leary  
Principal Ainsworth Elementary

"Student Led Gardens promote learning for children that lasts a lifetime."

-Dave Hoffman  
Principal Lincoln Elementary

**One third of Ainsworth & Lincoln 3<sup>rd</sup>, 4<sup>th</sup>, & 5<sup>th</sup> graders are not eating the minimally recommended 5 or more fruits & vegetables per day.**



## Student Gardens & Healthy Lifestyle Lessons

Working together to meet students' needs!

- Washington Cty Obesity Prevention Task Force
- Hy-Vee
- SoilMates New Pioneer Co-Op
- Washington Cty Public Health
- University of Iowa  
Dept Health & Human Physiology  
Obesity Initiative  
Prevention Research Center  
Vice President's Office for Research  
Provost's Office

# Together We Grow Healthy



Ainsworth Elementary  
Highland Community  
School District  
&  
Lincoln Elementary  
Washington Community  
School District

Spring 2013

# Goals:

- Healthy eating through nutrition education & food production
- Increased outdoor physical activity through gardening
- Renewed connection to Iowa's culture & landscape through soil education
- Healthy weight, growth, & development through student gardens & healthy lifestyle lessons



Scott Koepke, SoilMates, (center) teaching about gardening



**The American Academy of Pediatrics recommends that all children limit screen time (TV, video games, & computer usage) to < 2 hr/day.**

**Half of 5<sup>th</sup> graders in Ainsworth and Washington watch more than this each day.**



School gardens have a powerful impact on learning. Evidence suggests that gardening improves nutritional attitudes and behavior.

## Units of Study

- ❖ Seeds
- ❖ Soil
- ❖ Harvesting
- ❖ Plants/Nutrients
- ❖ My Plate
- ❖ Fruits and Veggies
- ❖ End of Season

Garden programs combat the obesity epidemic by teaching nutrition and providing physical activity.

# Involvement Opportunities

**Contact:**

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