



People's Garden School Pilot Program

Session 1: Project Overview and Research

2013 National Urban Extension Conference, Kansas

Brad Gaolach, Martha Aitken &
Gretchen Ferenz



Cornell University
Cooperative Extension



Session 1

Project Overview

Research

Educational Toolkit

Project Implementation

Broader Partnerships



Project Overview



Project Parameters



- USDA/FNS funded project
 - \$1 million, 2.5 years
 - Pilot
- Research Project
- 3-5 States, by population
 - 1 each from high (WA, NY); medium (IA); and low (AR).
- Schools having: 50%+ students receiving free & reduced price meals, & no existing gardens



Project Partnership



- **National Project Leadership Team:**

- Washington State University Extension
Brad Gaolach, Martha Aitken, Karen Barale
- Cornell University Cooperative Extension – New York City/Cornell University
Gretchen Ferenz, Caroline Tse, Nancy Wells
- Iowa State University Extension
Nancy Franz, Karen Pattison, Cayla Taylor, Janet Toering, Linda Naeve
- University of Arkansas Cooperative Extension
Laura Connerly, Janet Carson, Julie Treat

- **54 Schools**
- **Local Volunteers**
- **Extension Educators**



Project Timeline

- April 2011
 - Project Pre-Planning
- Fall 2011
 - Pre-Garden Data Collection Activities (*all schools*)
- Spring 2012
 - Garden Creation (*intervention schools*)
 - Gardening (*intervention schools*)
 - Data Collection (*all schools*)
- Fall 2012
 - Gardening (*intervention schools*)
 - Data Collection (*all schools*)
- Spring 2013
 - Gardening (*intervention schools*)
 - Data Collection (*all schools*)
 - Garden Creation (*control schools*)
- Summer 2013 - Spring 2014
 - Data analysis



Guiding Philosophy

Strengths of the Land Grant University

- Office serving every county
- Local Extension Educators and volunteers, with expertise in:
 - Nutrition (e.g. SNAP-Ed)
 - 4-H/Youth Development,
 - Community-based Horticulture (e.g. Master Gardener Volunteers)
- Builds ‘community’ with additional local partners



Research



Cornell University Research Team



- Nancy M. Wells, PhD, Lead Researcher, Associate Professor, Design & Environmental Analysis (DEA), Cornell University
- Beth Myers, doctoral student, DEA
- Jennifer Wilkins, PhD, Division of Nutritional Sciences
- Charles Henderson, MS, Human Development (Statistician)
- Cornell Research Associates



Research Questions

RQ 1: Does Fruit & Vegetable (FV) consumption at school increase as a result of garden participation?

RQ 2: Does FV consumption at home increase as a result of garden participation?

RQ 3: Does preference for FV change as a result of garden participation?

RQ 4: As a result of their involvement with the garden program, were there changes from baseline to follow-up in children's: FV knowledge; Engagement and participation in learning; Time spent outside, and amount of physical activity?

RQ 5: What mediating variables explain linkages from program activities to medium-term outcomes? e.g, Increased availability of FV at home, increased availability of FV at school.



Evaluation Questions

EQ 1: Document the *development and operation* of school gardens serving high-poverty schools in four geographically diverse areas.

EQ 2: Record the *varieties of fruits and vegetables* planted and the quantity produced in the gardens.



Research Methods

- **Randomized Controlled Trial (“True Experiment”)**
- **Schools Randomly Assigned to:**
 - Intervention – rec’d gardens in Spring 2012 OR
 - Wait list Control – receive gardens in late Spring 2013
- **Four Waves of Data Collection:**
 - Baseline Fall 2011
 - Wave 2 Spring 2012
 - Wave 3 Fall 2012
 - Wave 4 Spring 2013
- **Urban and rural schools**
- **Geographic differences**



Assessing Diet: multiple measures



| | | | | | |
|---|----------------------------------|--|--|--|--|
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> |
| Raisins | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> |
| Dried Fruit | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> |
| Peach | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> |
| Cherries | | | | | |

SURVEYS, at SCHOOL

| Name _____ | Age _____ | Date _____ | | | | |
|---|----------------------------------|--|--|--|--|--|
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> | |
| Pineapple | | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> | |
| Grapefruit | | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> | |
| Fruit Salad | | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> | |
| Applesauce | | | | | | |
|  | None <input type="checkbox"/> | 1-3 servings last week <input type="checkbox"/> | 4-6 servings last week <input type="checkbox"/> | 7 servings last week <input type="checkbox"/> | 8 or more servings last week <input type="checkbox"/> | |
| Watermelon | | | | | | |

SURVEYS, at HOME



LUNCH TRAY PHOTOS
(objective measure)

Surveys

- **Completed by children and parents together**
 - Home Environment
 - Food Frequency
- **Completed in school**
 - Fruit and Vegetable (FV) Availability & Preferences
 - Nutrition Knowledge
 - STEM Knowledge (4th & 5th grades only)
 - Physical Activity (PA) Questionnaire – *NY only, 4th and 5th grade only*
- ***Scripts provided for in school surveys***



Objective Measurement: Lunch tray Photography



Analyze Pairs of Trays Before & After Lunch



- Take 3 days of before/after photos of student's lunch for digital analysis
- Measures Consumption



School Cafeteria Records

- **Collect 10 days of Lunch Menus** (must include the 3 days photos were taken)
- **Collect 10 days of 'Production Records' from Cafeteria Staff** (must include 3 days photos were taken)

Rock on Cafe™ Food Production Record

Date: _____ Weather: _____ Other: _____

School Name: _____

| MENU | Recipe # | Portion Size | # of Portions Planned | # of Portions Prepared | lbs., Cans, or Cases Used | # of Student Portions Served | # of Adult Portions Served | Leftover & Code (Freezer, Cooler, Storage, Waste) | A La Carte (Adults/Students) | Cooking Temp | Serving Temp Min 140°F | Corrective Action | Students | |
|-------------------------|----------|--------------|-----------------------|------------------------|---------------------------|------------------------------|----------------------------|---|------------------------------|--------------|------------------------|-------------------|----------|--------|
| | | | | | | | | | | | | | Total | Adults |
| Entrees | | | | | | | | | | | | | | |
| Vegetables/Fruits/Juice | | | | | | | | | | | | | | |
| Grains/Bread | | | | | | | | | | | | | | |
| Milk | | | | | | | | | | | | | | |
| Condiments/Other Foods | | | | | | | | | | | | | | |

| MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|---|--|--|--|--|
| ♥ 2-E Egg Salad in a WW Wrap Or Chicken Nuggets Plain or Buffalo Tater Tots Chilled Fruit Cup | ♥ 3-F Chicken Caesar Salad with Breadsticks Or Chicken Patty Italiano With Mozzarella Cheese on a WW Bun Corn Niblets | ♥ 4-A P- Chef Salad with Breadsticks Or Hot Ham and American Cheese on a WW Wrap Steamed Squash Chilled Fruit Cup | ♥ 5-B Turkey and Swiss On Whole Wheat Bread Or Chicken Fajita with Black Beans and Salsa White Rice Chilled Fruit Cup | ♥ 6-C Whole Wheat Pizza Square Small Tossed Salad Low Fat Dressing Chilled Fruit Cup |
| ♥ 9-D Tuna Salad in a Whole Wheat Wrap Or Baked Chicken Patty on a WW Bun Green Beans Chilled Fruit Cup | ♥ 30-E Turkey Salad on a Bed of Lettuce Or Cheesy Baked Mac and Cheese Steamed Spinach Chilled Fruit Cup | ♥ 11-F Buffalo Chicken Salad with Cheese and Breadsticks Or Baked Mozzarella Sticks With WW Bread Slice Sweet Peas Fresh Apples | ♥ 12-A Turkey and American On a WW Roll Or Soft Turkey Taco with Lettuce, Cheese & Salsa Chilled Fruit Cup | ♥ 13-B Whole Wheat Pizza Square Cucumber Coins Low Fat Dressing Fresh Apples |
| ♥ 16-C Chicken Caesar Salad With WW Bread Slice Or Chicken Nuggets Plain or Buffalo WW Bread Slice Corn Niblets | ♥ 17-D P- Chef Salad Boiled Egg With Croutons Or Chicken Patty Parmesan On a Whole Wheat Bun Green Beans Apples | ♥ 18-E Buffalo Chicken Salad with Cheese and Breadsticks Or Grilled American Cheese on WW Bread Celery Sticks Apple Sauce | ♥ 19-F Ham & Swiss on a WW Roll Or Pizza Bagel with Mozzarella Cheese With Spinach Chilled Fruit Cup | ♥ 20-A Whole Wheat Pizza Square Carrot Sticks Low Fat Dressing Chilled Fruit Cup |
| ♥ 23-B Crunchy Chicken Salad With Cheese Bread Sticks Or Baked Chicken Patty on a WW Bun Green Beans Chilled Fruit Cup | ♥ 24-C Chef Salad with Egg and Breadsticks Or Mozzarella Sticks W Sauce Bread Slice Corn Niblets Chilled Fruit Cup | ♥ 25D Chicken Caesar Salad With Croutons Or Spaghetti with Meat Sauce Small Spinach Salad Chilled Fruit Cup | ♥ 26-E Buffalo Chicken Salad With Cheese and Breadsticks Or Hot Ham and American Cheese in a WW Wrap Green Beans | ♥ 27-F Whole Wheat Pizza Square Small Tossed Salad Low Fat Dressing Chilled Fruit Cup |
| ♥ 30 School Closed Memorial Day | ♥ 31-A Crunchy Chicken Salad With Cheese and Breadsticks Or Soft Turkey Taco With Lettuce and Cheese Salsa |  | | ♥ Veggie of the Month  Spinach |



THE PEOPLE'S GARDEN

Additional Information Collected

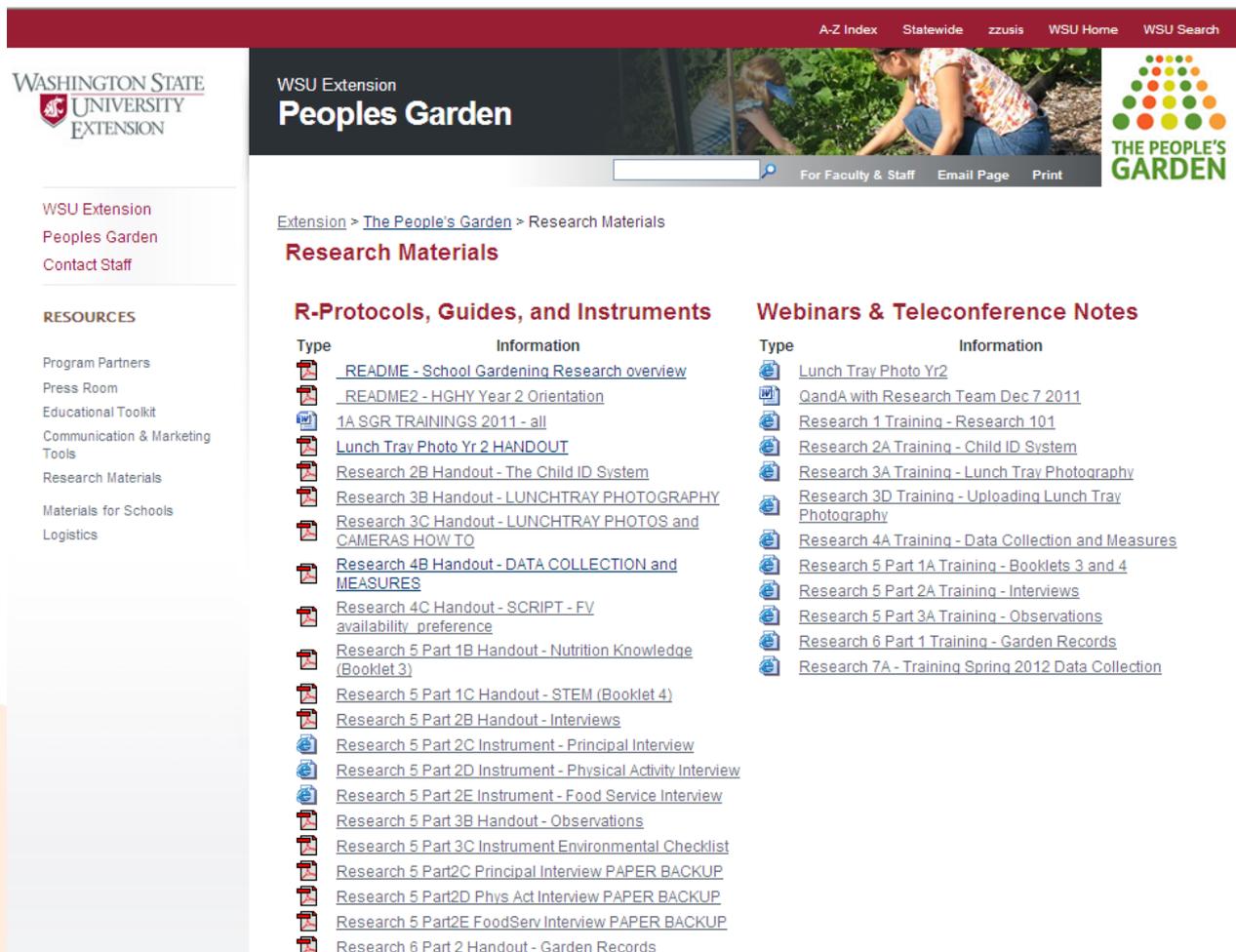


- **Class Info – Who we are**
- **Teacher’s Log**
- **Principal Interview**
- **School Environment Assessment**
- **Garden Records**
 - **Garden Activities**
 - **Garden Production**



Training on Research Protocol and Instruments for Extension Educators

- Training Webinars
- Written Guidance
- Q&A
- Teleconferences



The screenshot shows the WSU Extension Peoples Garden website. The header includes navigation links for A-Z Index, Statewide, zzsis, WSU Home, and WSU Search. The main content area is titled "Research Materials" and is divided into two columns: "R-Protocols, Guides, and Instruments" and "Webinars & Teleconference Notes".

WSU Extension Peoples Garden

Extension > [The People's Garden](#) > Research Materials

Research Materials

R-Protocols, Guides, and Instruments

| Type | Information |
|------|--|
| | README - School Gardening Research overview |
| | README2 - HGHY Year 2 Orientation |
| | 1A SGR TRAININGS 2011 - all |
| | Lunch Tray Photo Yr 2 HANDOUT |
| | Research 2B Handout - The Child ID System |
| | Research 3B Handout - LUNCHTRAY PHOTOGRAPHY |
| | Research 3C Handout - LUNCHTRAY PHOTOS and CAMERAS HOW TO |
| | Research 4B Handout - DATA COLLECTION and MEASURES |
| | Research 4C Handout - SCRIPT - FV availability preference |
| | Research 5 Part 1B Handout - Nutrition Knowledge (Booklet 3) |
| | Research 5 Part 1C Handout - STEM (Booklet 4) |
| | Research 5 Part 2B Handout - Interviews |
| | Research 5 Part 2C Instrument - Principal Interview |
| | Research 5 Part 2D Instrument - Physical Activity Interview |
| | Research 5 Part 2E Instrument - Food Service Interview |
| | Research 5 Part 3B Handout - Observations |
| | Research 5 Part 3C Instrument Environmental Checklist |
| | Research 5 Part2C Principal Interview PAPER BACKUP |
| | Research 5 Part2D Phys Act Interview PAPER BACKUP |
| | Research 5 Part2E FoodServ Interview PAPER BACKUP |
| | Research 6 Part 2 Handout - Garden Records |

Webinars & Teleconference Notes

| Type | Information |
|------|---|
| | Lunch Tray Photo Yr2 |
| | QandA with Research Team Dec 7 2011 |
| | Research 1 Training - Research 101 |
| | Research 2A Training - Child ID System |
| | Research 3A Training - Lunch Tray Photography |
| | Research 3D Training - Uploading Lunch Tray Photography |
| | Research 4A Training - Data Collection and Measures |
| | Research 5 Part 1A Training - Booklets 3 and 4 |
| | Research 5 Part 2A Training - Interviews |
| | Research 5 Part 3A Training - Observations |
| | Research 6 Part 1 Training - Garden Records |
| | Research 7A - Training Spring 2012 Data Collection |

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Peoples Garden
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RESOURCES

- Program Partners
- Press Room
- Educational Toolkit
- Communication & Marketing Tools
- Research Materials
- Materials for Schools
- Logistics



Educational Toolkit



Development Process

- Established Criteria for Toolkit Content
 - experiential learning
 - age appropriate
 - research-based content
 - standards alignment
- Developed strategy for review process
- Reviewed 17 curricula
- Selected lessons and other resources



Planning for Positive Youth Development through Garden-Based Learning: Generosity, Belonging, Power, and Mastery

Use this tool to dig deeper into your program activities and support the growth of collaborative, committed, reflective, and caring young people. Consider an activity: planting pumpkins, planning a new garden, or hosting a harvest festival. How might you build in opportunities for generosity, belonging, power, and mastery?

GENEROSITY ::: *"I can make a difference."*

Strategies:

- Show how garden skills can be used in positive ways.
- Respect and encourage friendships.
- Encourage compassion for others, and concern for the earth.
- Reinforce gestures of caring, and ask young people to take responsibility for helping others.
- Share the harvest—consider all the ways to extend what you are learning and growing to improve the lives of others.
- Establish a mentoring component to link older students with younger students.



POWER ::: *"I matter."*

Strategies:

- Ask yourself: "Is there something I am doing that a young person could be learning by doing?"
- Include children in discussions and encourage their input.
- Ask children to do something instead of telling them to do it.
- Give children responsibility with a minimum of reminders.
- Commend children who recognize the limits of their independence and seek counsel.
- Allow children the thrill of overcoming an obstacle.
- Maintain a close link between independence and responsibility. Share decision-making with young people by involving them in running the garden program.



BELONGING ::: *"I belong here."*

Strategies:

- Encourage students work together to complete tasks.
- Spend time gardening with students, and take your time!
- Think of ways to involve families and community.
- Work in small groups to encourage close relationships.
- Promote collaborative and cooperative learning.
- Show respect for the value of diverse cultures.
 - Provide multiple opportunities for youth to develop relationships with adults.
 - Be sure to have time for fun!



MASTERY ::: *"I can."*

Strategies:

- Include hands-on activities, projects or exhibits.
- Think of ways to show how gardening relates to workplace-related challenges and activities that apply to daily life.
- Include different ways to investigate and discover.
- Think of multiple outcomes.
- Focus on the long-term goals of learning.
- Provide prompt feedback.
- Model and teach that failure and frustration are learning experiences.



Toolkit components



- Lesson plans with activities, snack suggestions & recipes
- Supporting Resources:
 - Garden Implementation Guide
 - Gardening
 - School food services
 - Food safety in the garden
- Training Webinars





The People's Garden School Pilot Project

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2 subscribers

356 video views

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Grade 2: Lesson 3: Our Food Garden Plan
by ExtSchoolGarden 1 month ago

93

About The People's Garden School Pilot Project

The "Healthy Gardens, Healthy Youth" School Pilot Project is an Extension partnership that aims to engage more than 4,000 elementary students in creating vegetable & fruit gardens in 54 low-income schools, as part of a 2.5-year research study.

- [f Visit us on Facebook](#)
- [WSU People's Garden Site](#)
- [USDA People's Garden Site](#)
- [ISU Growing in the Garden Curricula](#)

| | |
|-----------------|-----------------|
| Created by | ExtSchoolGarden |
| Latest Activity | Jan 30, 2012 |
| Date Joined | Jan 19, 2012 |

[more v](#)



WSU Extension Peoples Garden



For Faculty & Staff Email Page Print

- WSU Extension
- Peoples Garden
- Contact Staff

RESOURCES

- Program Partners
- Press Room
- Educational Toolkit
- Communication & Marketing Tools
- Research Materials
- Materials for Schools
- Logistics

[Extension](#) > [The People's Garden](#) > Educational Toolkit

Educational Toolkit

The documents on this page are for the use by the personnel teaching the *Healthy Gardens, Healthy Youth, Peoples Garden School Pilot Project* gardening and classroom lessons. These materials are password protected during the development phase of this program. If you are associated with this program, you should have received the appropriate log in credentials from your state lead, please contact them if you need assistance.

[Here is a copy of the Year 2 Orientation Packet](#)

Grade 3 Lessons

| Type | Information |
|------|---|
| | Grade 3 Lesson 1 Sept Harvest |
| | Grade 3 Lesson 2 Oct Post Harvest |
| | Grade 3 Lesson 3 Nov Apples Squash |
| | Grade 3 Lesson 4 Dec MyPlate |
| | Grade 3 Lesson 5 Jan Food Garden Plan |
| | Grade 3 Lesson 6 Feb Mulch and Cabbage |
| | Grade 3 Lesson 7 March Planting |
| | Grade 3 Lesson 8 Apr Food for Plants and People |
| | Supplemental Garden-Based Activities |
| | Supplemental Garden Fitness Activities |

Grade 5 Lessons

| Type | Information |
|------|---|
| | Grade 5 Lesson 1 Sept Harvest |
| | Grade 5 Lesson 2 Oct Post Harvest |

Grade 3 Webinars, Trainings & Support

| Type | Information |
|------|--|
| | 2012-2013 Curriculum Overview |
| | Composting! |
| | Grade 3 Fall Harvest Apples and Squash |
| | Grade 3 MyPlate |
| | Harvesting Your Gardens |
| | Making Fresh Salsa in the Classroom |

Grade 5 Webinars, Trainings & Support

| Type | Information |
|------|---|
| | 2012-2013 Curriculum Overview |
| | Composting! |
| | Grade 5 Fall Harvest Pears and Root Veg |
| | Grade 5 Harvest Soup |

Grade 5 Webinars, Trainings & Support - Peoples Garden Resource Web Part

Project Implementation



Extension Educators

- **University of Arkansas Cooperative Extension**
Robin Bridges, David Carwell, Keith Cleek, Mitch Crow, Kevin Norton, Sara Sowell, Fran Tomerlin, Anthony Whittington
- **Cornell University Cooperative Extension**
Zahrine Bajwa, Mary Lee Bourbeau, Donna Alese Cooke, Susan Coyle, Jeanne Darling, Valerie Dudley, Caroline Kiang, Denise Kolankowski, Chris Logue, Amie Matchak, Ellen Sergel
- **Iowa State University Extension**
Kim Brantner, Cheryl Connor-Perez, Sue Cook, Kendra Crooks, Bryan Foster, Leslie Kauffman, Mary Kramer, Jacki Luckstead, Janet Martin, Karen Pattison, Daleta Thurness, Sharon Wasteney
- **Washington State University Extension**
Barb Schreibe, Kerri Wilson, Lisa Hervieux



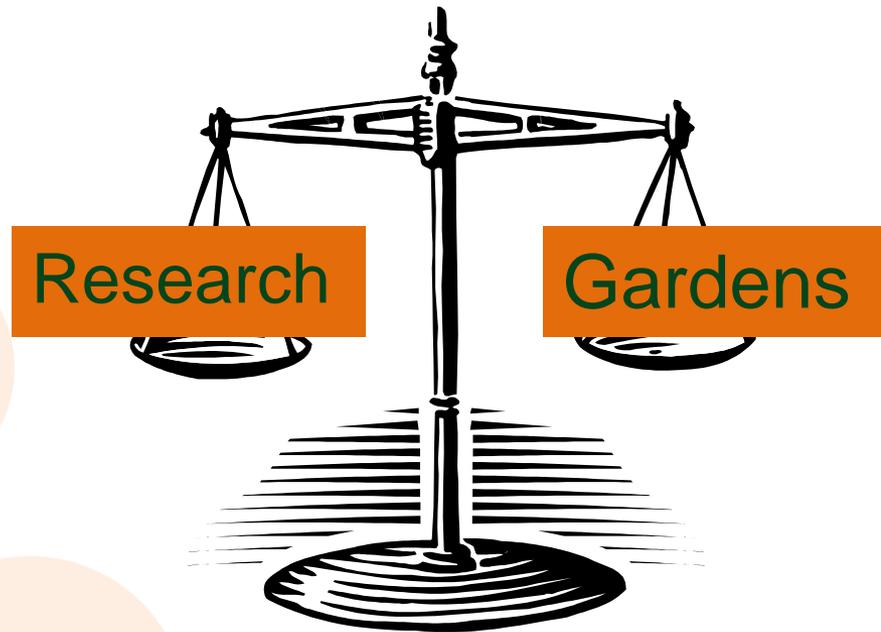
Educators in Action

Video



Expectations and Balance

Local adaptability vs. research



Linking to the Schools

- Secure participation
- Build relationships
- Negotiate roles
- Implement Educational Toolkit
- Collect data
- Gardens



Garden Sustainability

- School and community involvement
 - Garden committee (youth, parents, teachers, custodians, community members)
 - Infrastructure
 - Establish a summer maintenance plan
 - Link to school goals
- Resources
 - Master Gardeners, 4-H
 - Curriculum
- Supplies
 - Tools
 - Seeds & starts



Unique challenges

- Schools
 - Academic pressures
 - Changes in personnel
 - Transition to Year 2
- Nutrition services
 - Subcontractors
 - Food safety concerns
 - Changes in nutrition guidelines
- Educator workload and project timing



By the end of the project 24 educators will have:

Collected:

- 86,000 surveys
- 129,000 pre and post lunch tray photos
- 2,000 cafeteria production records

Implemented:

- 4,000 educational toolkit lessons

Planted:

- 6,200 square feet of gardens



Broader Partnerships



Extension and External Partnerships

- Social & Health Research Center, San Antonio, TX
- Fred Hutchinson Cancer Research Center, Seattle, WA
- Cornell Food Brand Lab, Ithaca, NY
- Cornell Institute for Translational Research on Aging (CITRA), Ithaca, NY



Extension and External Partnerships

Additional Funders:

- **Atkinson Center for a Sustainable Future, Academic Ventures Fund, Cornell University,** to support a strategic planning workshop involving NY Extension Educators and Specialists to pilot test and refine research protocols, tools & training.
- **Cornell University Agricultural Experiment Station (Hatch funds) and Cornell Cooperative Extension (Smith Lever funds)** received from the **National Institutes for Food and Agriculture (NIFA) U.S. Department of Agriculture,** to examine the impact of volunteer/mentor involvement on the project.
- **Robert Wood Johnson Foundation Active Living Research Program,** to examine the effects of school gardens on physical activity.
- **College of Human Ecology, Cornell University, Cooperative Extension Seed funds**
- **Cornell University Cooperative Extension Summer Intern Program, 2011, 2012, 2013**
- **Wellmark Foundation Healthy Communities Grant Program** to provide lessons, gardens, healthy snacks and leadership to all classrooms at project's participating schools.



Sustaining the Project Outcomes



- Support local sustainability planning with Extension Educators and Teachers
- Support local engagement of volunteers and broader community
- Disseminate the Educational Toolkit broadly to Extension and external networks
- Make project website publicly accessible



Questions?

Follow the Project:

Project website:

peoplesgarden.wsu.edu

Facebook:

www.facebook.com/HealthyGardensHealthyYouth

YouTube channel:

www.youtube.com/user/ExtSchoolGarden



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Thank you



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