A randomized controlled trial (RCT) on the health impacts of gardens with Wind River Indian Reservation 2015-2020

NIH grant no. R01 HL126666-01
Who we are, who is here today, (& what we do)

Blue Mountain Associates: James “Jim” Sutter, Dr. Virginia Sutter & Etheleen Potter (Gardening)

Wind River Development Fund: Etheleen Potter (Recruit and support families)

Eastern Shoshone Tribal Health: David Meyers & Naomi Bell Harris (Recruit and support families)

University of Wyoming: Christine Porter, Melvin Arthur & Alyssa Wechsler (Data)

with 100 Eastern Shoshone & Northern Arapaho families (Garden now or wait, share outcomes)

& members of the Community Advisory Board (Insight, oversight, and support)
Melvin Arthur, 2015, from "Restorying the Northern Arapaho Food System" thesis

Water rights: 2.2 million acres

About 15,000 people
Growing resilience project origins

Jim Sutter & Dr. Virginia Sutter of Blue Mountain Associates In WRIR
Growing resilience co-design and pilot

The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

<table>
<thead>
<tr>
<th>Activities</th>
<th>Yes, limited a lot</th>
<th>Yes, limited a little</th>
<th>No, not limited at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf</td>
<td></td>
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<tr>
<td>b. Climbing several flights of stairs</td>
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</tbody>
</table>

Survey Completion

0% [progress bar] 100%
The “real thing” RCT over five years

Objectives
- Establish, evaluate, and sustain home food gardening as a health intervention
- Expand public health relationships
- Assess adult and child BMI outcomes together

Aims
1. Establish a sustainable, scalable, culturally appropriate home garden intervention
2. Identify health impacts of home gardening in Native American Families via RCT

Rationale
Supporting home gardens with tribal families will become a culturally relevant and empowering health promotion strategy for tackling health disparities.
### Recruiting 100 families in 3 waves over 3 years.

### With each wave...

**Dec:** Recruit, screen and enroll families  

**Jan:** Randomize to garden or delay 2 years  

**Jan:** 1st health data gathering with all families  

**May:** New summer gardens with half the families  

**Aug:** 2nd health data gathering  

**Jan:** 3rd health data gathering  

**May:** Renewed gardens for 2nd season  

**Aug:** 4th (and last?) health data gathering  

**Following May:** New gardens with other half of families + $200 garden gift card in their second year
Setting up for data gathering
6:00am
Health outcome measures: taken twice a year for two years

<table>
<thead>
<tr>
<th>Adults</th>
<th>Biometric</th>
<th>Blood-Based</th>
<th>Survey-Based</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• BMI</td>
<td>• Full 32-level chemistry profile</td>
<td>• Food security</td>
</tr>
<tr>
<td></td>
<td>• Waist circumference</td>
<td>• Hemoglobin A1C (diabetes)</td>
<td>• Physical &amp; mental wellness (SF-12)</td>
</tr>
<tr>
<td></td>
<td>• Blood pressure</td>
<td>• Vitamin D (sun exposure)</td>
<td>• Health management</td>
</tr>
<tr>
<td></td>
<td>• Hand strength</td>
<td>• Serum beta carotene (vegetable consumption)</td>
<td>• Physical activity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Vegetable intake management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Medications and supplements</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>• BMI</td>
<td>• Hemoglobin A1C via finger prick</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Waist circumference</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **BMI**: Body Mass Index
- **Waist circumference**: Waist measurement
- **Blood pressure**: Blood pressure measurement
- **Hand strength**: Hand strength measurement
- **Full 32-level chemistry profile**: Detailed blood chemistry test
- **Hemoglobin A1C**: Test for diabetes
- **Vitamin D**: Test for vitamin D levels
- **Serum beta carotene**: Test for beta carotene levels
- **Food security**: Assessment of food security
- **Physical & mental wellness (SF-12)**: Assessment of physical and mental health
- **Health management**: Assessment of health management strategies
- **Physical activity**: Assessment of physical activity levels
- **Vegetable intake management**: Assessment of vegetable intake
- **Medications and supplements**: Assessment of medications and supplements
- **BMI**: Body Mass Index
- **Waist circumference**: Waist measurement
- **Hemoglobin A1C via finger prick**: Hemoglobin A1C test via finger prick
- **N/A**: Not applicable
Data passport

During each visit we will fill this checklist out as you go through the stations so we all know how many you have left.

<table>
<thead>
<tr>
<th>Station</th>
<th>Visit 1</th>
<th>Visit 2</th>
<th>Visit 3</th>
<th>Visit 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit Date</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Check-in</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2. Data Entry</td>
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<tr>
<td>3. Blood Draw</td>
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<tr>
<td>4. Biometrics</td>
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<tr>
<td>5. Survey</td>
<td></td>
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<tr>
<td>6. Check-out</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

1st Date: _________ WHF Initials ___

Adults Only
Blood Pressure _________
Hand Strength (lbs) Left ___ Right ___

Adults and Children
Height (ft and inches) _________
Weight (lbs) _________
Girth (inches) _________
BMI _________

Children Only
Hemoglobin A1C _________

2nd Date: _________ WHF Initials ___

Adults Only
Blood Pressure _________
Hand Strength (lbs) Left ___ Right ___

Adults and Children
Height (ft and inches) _________
Weight (lbs) _________
Girth (inches) _________
BMI _________

Children Only
Hemoglobin A1C _________
Baseline BMI data from first 60 families in our first two waves.

Adult BMI at enrollment (117 adults):
- Normal: 50%
- Overweight: 35%
- Obese Class I: 14%
- Obese Class II: 1%
- Obese Class III: 1%

Child BMI for age (z scores) at enrollment (96 children):
- Underweight: 1%
- Normal: 50%
- Overweight: 35%
- Obese: 14%
Working for health with 60 families so far, with 40 more to come
Recruiting, supporting and scheduling families

Would you like to start a garden within the next two years?

Are you interested in measuring the health of your family?

Family members receive cash for participating in each health assessment.

Help answer the research question about what gardens do for health.

You and your family may be eligible to participate if you:

- Live on Wind River Reservation, including Riverton.
- Did not have a home food garden last year or over 30 square feet.
- Have at least one adult member who is Native American.
- Have at least two adults willing to participate in four health assessment sessions over two years, or are a single-adult household. Stipends each time are $40 for each adult, $15 for each child 5-18, and $20 for gas per family. That means a family of two adults and two children would get $150 per session.
- Are willing to wait up to two years to start your garden. (Wait up to two years? Eeeek! But it’s very important—having some families wait to garden is the only way we can answer the question about what gardens do for health.)

Interested? Contact:

For additional information about the project:

- Alyssa Wachholder, UW Project Manager
  - Phone: 307-399-5247
  - Email: info@growingresilience.org

For information about gardens:

- Jim Sutter, Blue Mountain Associates
  - Phone: 307-399-4855
  - Email: jimsutter@gmail.com

2016-2017 Growing Resilience Screening Form

* Required

Participant Contact Information

Who is completing this screening form? *

- The participant who will be head gardener
- Eastern Shoshone Tribal Health Representative
- Northern Arapaho Health Representative
January 2016

WIND RIVER NEWS | Subscribe today. Call 332-2333

GROWING RESILIENCE OPEN HOUSE, LOGO CONTEST*

Open House: 11AM - 7PM
Wednesday, January 27th
Frank Wise Business Center,
Ft. Washakie - 3 Ethete Road

Refreshments, Door Prizes, Project Logo Voting
*Enter your design for the logo contest by Monday, January 25th
Send logos to: info@growingresilience.org or Blue Mountain Associates.

Growing Resilience is a community-based research project supporting home gardens for 100 families on the Wind River Indian Reservation in partnership with the University of Wyoming with funding from National Institutes of Health.

See www.growingresilience.org or call Blue Mountain Associates, 856-1983; Eastern Shoshone Tribal Health 332-6805; or Northern Arapaho Tribal Health 399-3247 for more information.

December 2016

Open House

The Growing Resilience team of Blue Mountain Associates, University of Wyoming, Eastern Shoshone Tribal Health, Wind River Development Fund & the Community Advisory Board

specially invites you

Enjoy refreshments ● Meet the Community Advisory Board ● Sign up to participate

Introductory comments and a short presentation will begin at 2:30pm

Day: Sunday, December 4th, 2016
Time: 2pm-4pm
Place: Black Coal Senior Center
4 Great Plains Rd., Arapahoe, WY

Questions?
contact Melvin Arthur ● 307-231-6414 ● marthul1@uwyo.edu
www.growingresilience.org
Gardening!
Gardening!
Using two ears and one mouth

Conceptual Frameworks of Indigenous Food Systems

- Pre-Contact Era Approximately 20,000
- Foreign Intrusion Era Approximately 500 Years
- Grassroots Sustainable Food System Current
Randomly asking people to wait two years for their gardens

e. Are willing to wait up to two years to start your garden. (Wait up to two years?! Ugh! But it’s very important—having some families wait to garden is the only way we can answer the question about what gardens do for health!)
Relationships at core of research

Aim 1: Gardening
- Blue Mountain Associates
  - Garden design and installation
  - Training and mentorship
  - Tool library

Aim 2: RCT on health impacts of home gardens
- University of Wyoming
  - Survey design and administration
  - Data management and analysis
  - Randomization
  - LMS z-curve
  - Medication change analysis

ESTH and WRDF
- Family recruitment and retention
  - Wyoming Health Fairs
    - Collect biometric and blood data
  - Individual health reports

“Research is a ceremony… The purpose of any ceremony is to build stronger relationships or bridge the distance between our cosmos and us.”
Wilson 2008: 137
info@growingresilience.org
www.growingresilience.org

Thanks to National Institutes of Health (NHLBI with NIGMS) grant no. R01 HL126666-01, the “control” families who are waiting to garden, the families who are gardening, the organizational partners, and to all of you.