



**LEGACY**  
HEALTH

## Gardens in Health Care: Rehabilitation, Recovery & Restoration

*Teresia Hazen, MEd, HTR, QMHP*

*Connecting with nature impacts positive health outcomes*

EMANUEL Medical Center

GOOD SAMARITAN Medical Center

MERIDIAN PARK Medical Center

MOUNT HOOD Medical Center

SALMON CREEK Medical Center

RANDALL CHILDREN'S HOSPITAL Legacy Emanuel

LEGACY MEDICAL GROUP

LEGACY LABORATORY

LEGACY RESEARCH

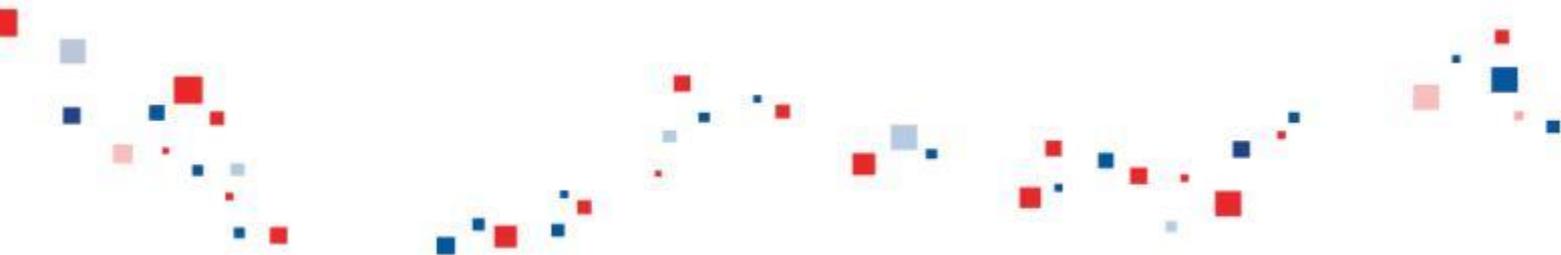
LEGACY HOSPICE

Our legacy is yours.



## Mission Statement

Our legacy is good health for our people, our patients, our communities, our world.



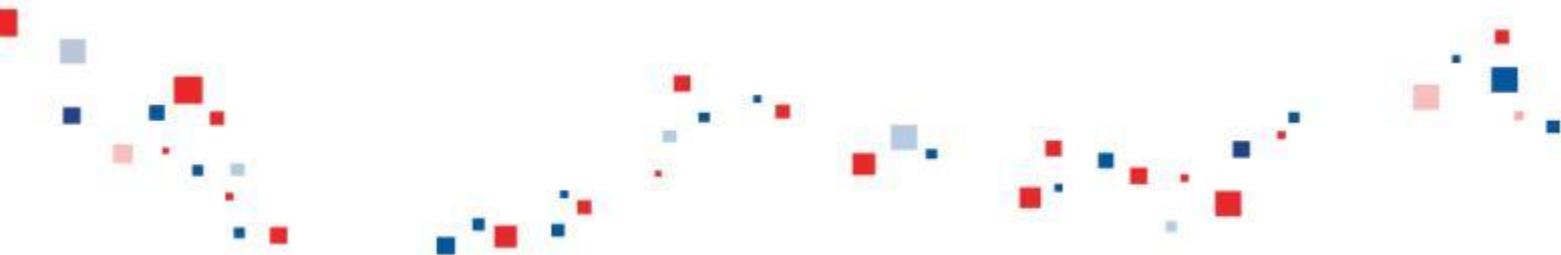
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## Objectives:

1. Summarize the Theory of Supportive Design.
2. Identify research to support and promote nearby nature in patient care services.
3. Describe garden elements and programming to support health and well-being.



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“Most hospitals have manicured shrubs and grounds. The difference here is the gardens are part of the therapeutic space, where there are patients out in them.”

Wall Street Journal  
April 6, 2010

George Brown, M.D., President, CEO  
Legacy Health



# STRESS is pervasive in health care settings

Patient centered care

Family centered care

Employee restoration



# Evidence base to support gardens in health care

## Theory of Supportive Design

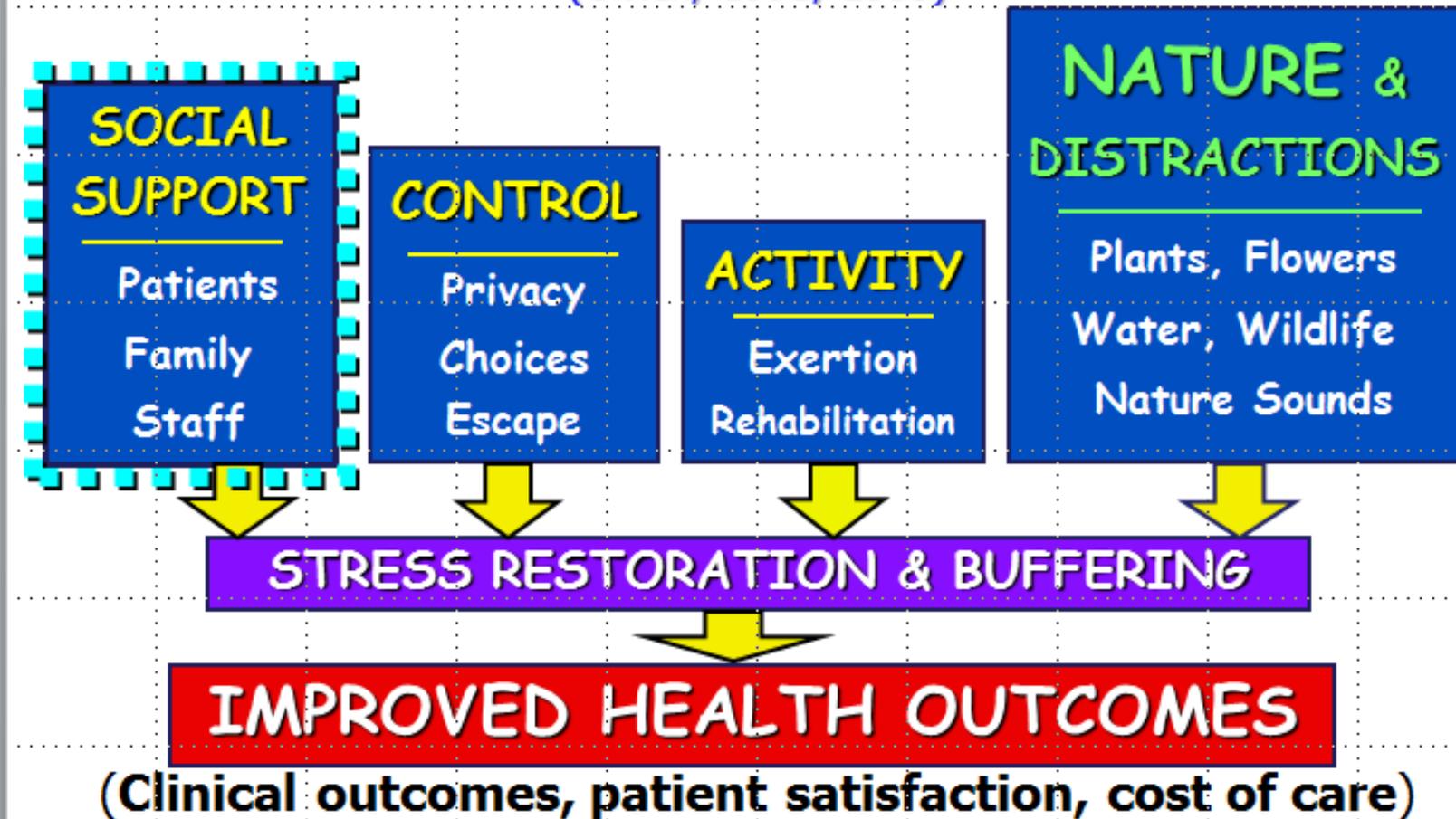
- A. Social support
- B. Choices leading to sense of control
- C. Movement, mild exercise & rehabilitation
- D. Nature experience benefits



# Evidence-Based Garden Design Theory:

*Design for Reducing Stress, Improving Outcomes*

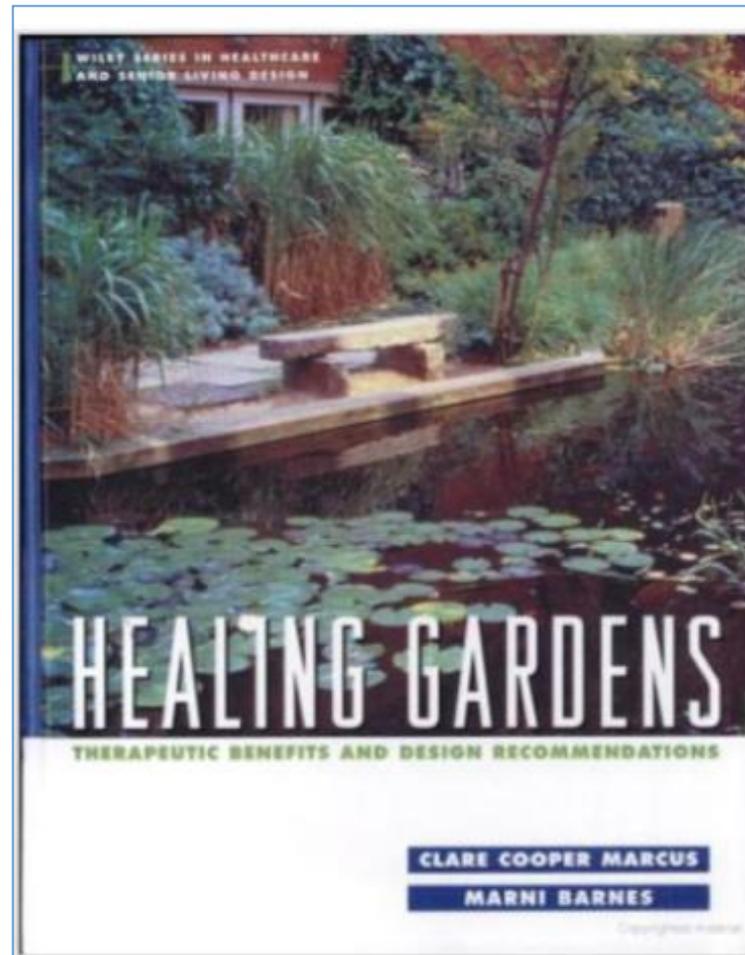
(Ulrich, 1991, 1999)



Courtesy of Roger S. Ulrich

Ulrich, R. S. (1999). Effects of gardens on health outcomes: Theory and research. In C.C. Marcus & M. Barnes (Eds.), *Healing Gardens*. New York: Wiley, 27-86.

- Chapter two



## Research to inform planning, funding and program decisions

- Human Ecology Review
- Journal of Obstetric, Gynecologic, & Neonatal Nursing JOGNN
- American Journal of Critical Care

# Human Ecology Review

*Pleasant, A., M. Scanlon and M. Pereira-Leon (2013), 'Literature review: Environmental design and research on the human health effects of open spaces in urban areas', Human Ecology Review, 20 (1), 36-49.*

This literature review identified six overarching design criteria:

1. encourage human activities
2. a setting for sensory stimulation
3. develop the space for safety and security
4. encourage present moment awareness
5. consider the culture of the population using the space
6. promote nature as a metaphor for healing

# Journal of Obstetric, Gynecologic, & Neonatal Nursing

Stark, M. A. (2001), Nature as a Complementary Therapy for Women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 30: 574–578.

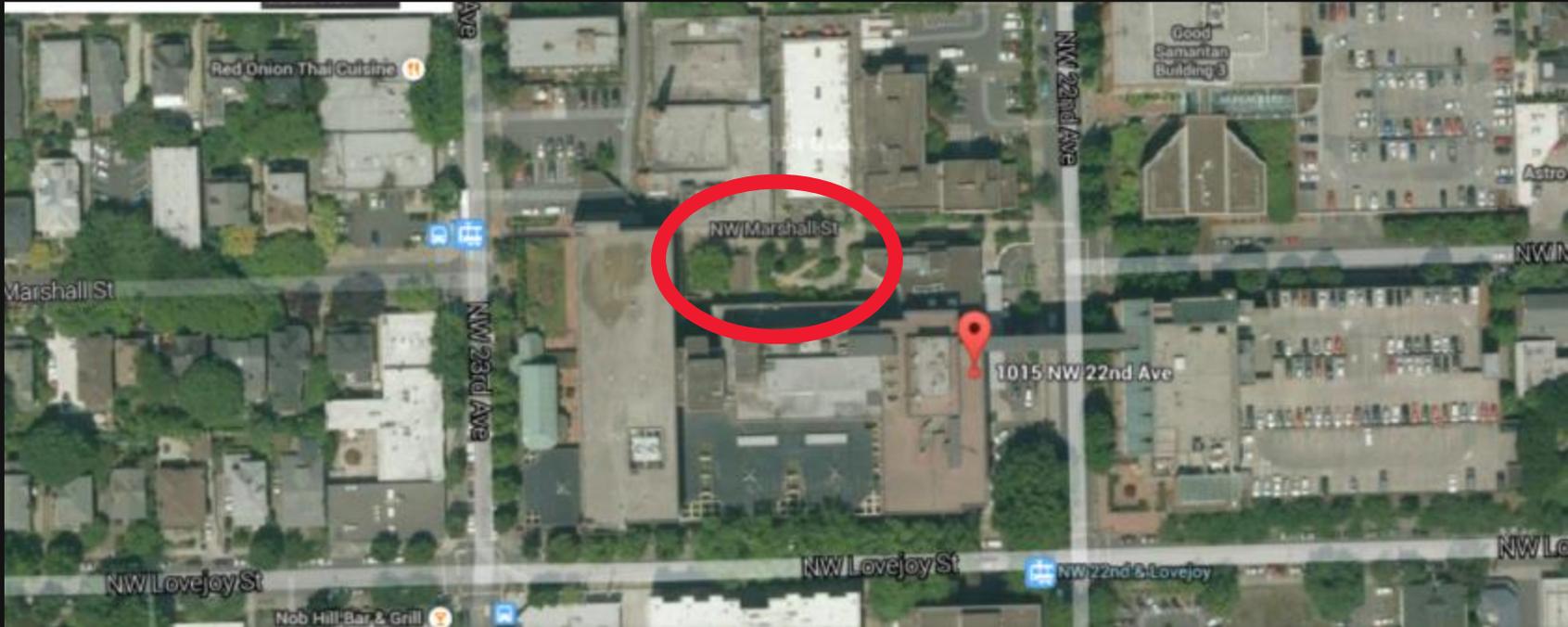
- Nurses can present information about the value of natural restorative environments in the workplace.
- Employee lounges with plants and window views of nature.
- Gardens, picnic tables, and bird feeders outdoors.
- Promote attentional health and restoration by incorporating nature.
- Maintaining gardens accessible to staff, patients, and families.

## American Journal of Critical Care

McAdam, J., D.K. Fontaine, D.B. White, K.D. Dracup and K.A. Putillo (2012), “Psychological Symptoms of Family Members of High-Risk Intensive Care Unit Patients,” *American Journal of Critical Care*, 21(6):386-394.

- To compare levels of posttraumatic stress disorder, anxiety, and depression
- Significant decrease after 3 months after the experience. Many family members still had significant risk for PTSD and borderline anxiety and depression at 3 months

# Legacy Good Samaritan Medical Center 1015 NW 22<sup>nd</sup> Ave. Portland Oregon 97210



Legacy Good Samaritan Medical Center  
Stenzel Healing Garden 1997  
Rehabilitation Institute of Oregon



# Rehabilitation patients in horticultural therapy



# Movement, mild exercise & rehabilitation therapies for everyone in the garden



# Free Garden Tour and Neighborhood Nature Walk



# Legacy Mount Hood Medical Center Healing Garden 2009

## Gresham, Oregon



## View out the window to nature



# Nature experience



# Legacy Meridian Park Medical Center Ide Healing Garden 2010 Tualatin, Oregon



# *Connecting with nature impacts positive health outcomes*



# Choices and sense of control



# Oregon Burn Center Garden 2004

## Legacy Emanuel Medical Center



# Oregon Burn Center Garden



# Nature experience in the view out the window



# Theory of Supportive Design---Social Support



# Social and emotional support



# Burn Concern Support Group



Patient centered care---patients actively engaged in and directing their care.

# Behavioral Health Garden 2008

## Legacy Emanuel Medical Center



decrease in depression  
and anxiety

improved social  
interactions

increased efficacy



Well-designed gardens  
employ and engage all of  
the senses.



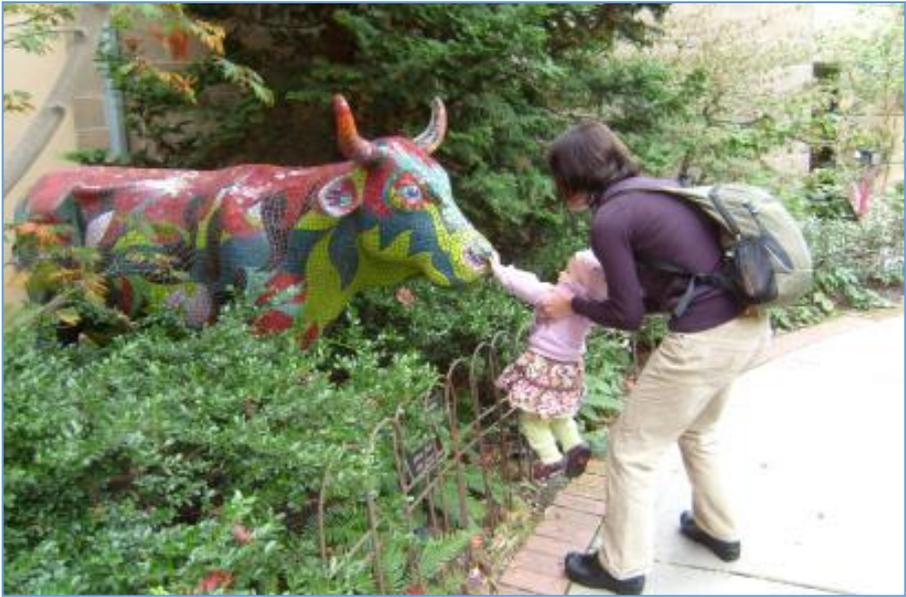
# The Children's Garden at Legacy Emanuel 1997



Legacy Emanuel Children's Garden

Gretchen Vadnais  
landscape architects, l.l.c.

# Designing for families to enjoy time together in the garden

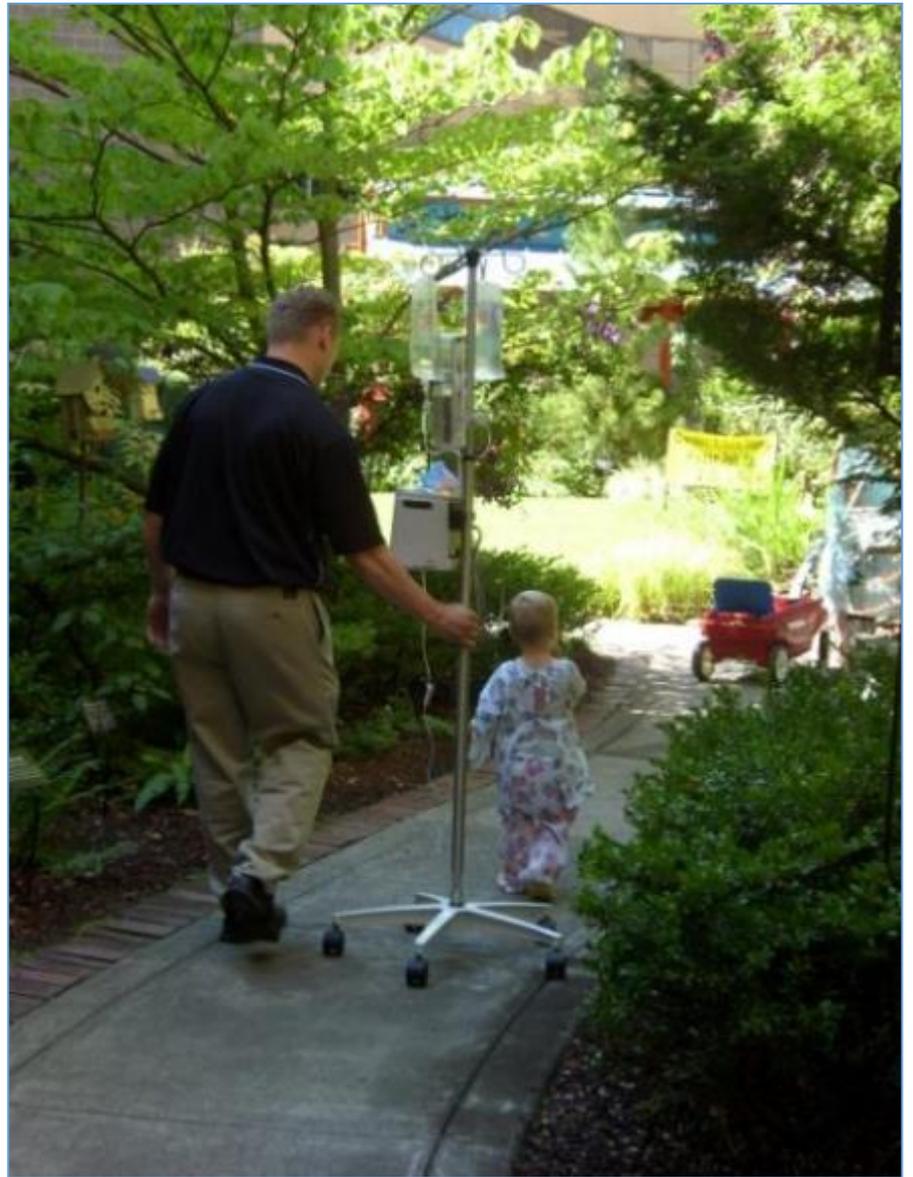


# Pediatric Nature Stations

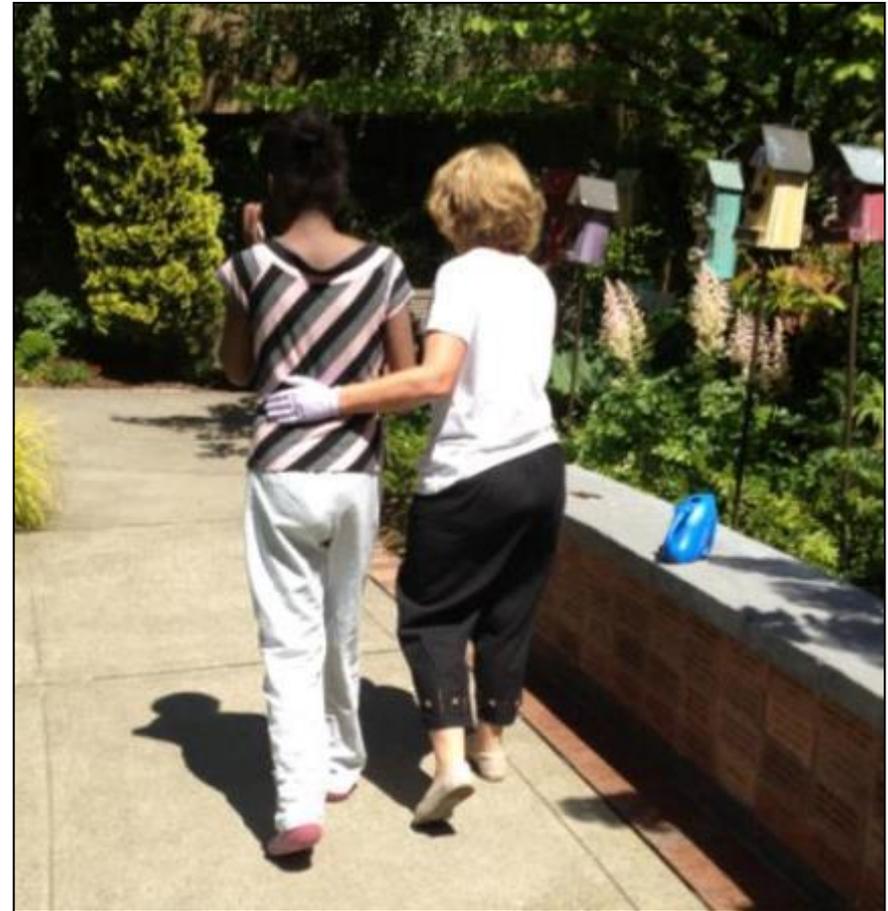


## Movement, mild exercise & rehabilitation therapies





# Rehabilitation therapies in the garden



# Recreational therapy



## *Connecting with nature impacts positive health outcomes*



# Choices and getting our needs met



# Choice and control



# Terrace Garden at Legacy Emanuel Medical Center (before)



# Family Birth Center & Cardiovascular ICU: A Nature Place



# Overall goals for Legacy Research Institute

To study the effects of garden exposure in three very different populations

Study 1 – Birthing Study

Study 2 – Family Study

Study 3 – Nurse Study

Garden and research grant funded by TKF Foundation Nature Sacred Initiative  
[www.naturesacred.org](http://www.naturesacred.org).

Legacy garden research:

<http://www.legacyhealth.org/for-health-professionals/legacy-research-institute.aspx>

<http://www.theintertwine.org/blog/nature-hospitals>

<http://www.opb.org/radio/programs/thinkoutloud/segment/international-health-care-design-researcher-roger-ulrich-on-gardens/>

## Study 4 observational mapping study

- Jennifer Antick, PhD  
Pacific University  
Health Track PhD students



## Study 5 POE

# Music in the tree tops



# Stress coping and birthing 24-7



# Nature: A stress coping resource for employees 24-7



# Four seasons of sensory stimulation in nature



# Nature experience



# Nature experience and the borrowed view



# Nature and nutrition



# Nearby nature



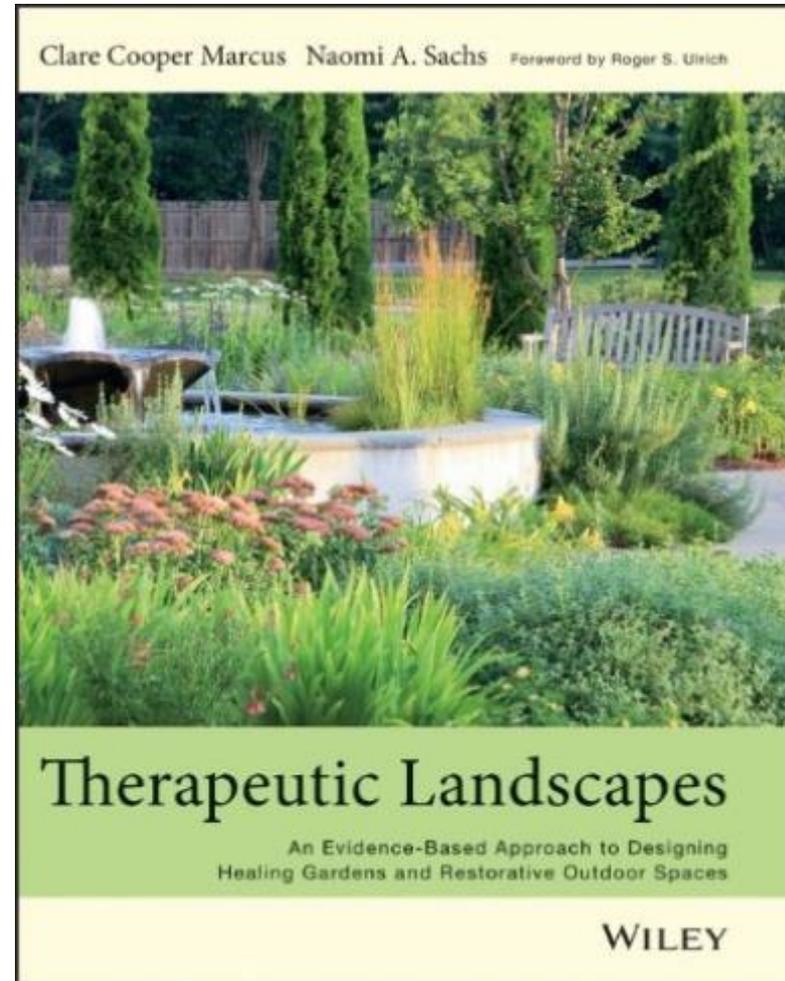
# Resources

American Horticultural Therapy  
Association annual conference

Philadelphia, Oct. 11-12, 2014

Stephen R. Kellert  
Yale University, School of Forestry  
& Environmental Studies

“Nature’s Role in Human Health,  
Productivity and Wellbeing”



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## Increasing action around health and nature

Conduct more research

TKF Foundation Nature Sacred Initiative



Collect and share the evidence base

Therapeutic Landscape Network



Urban Forestry Urban Greening Research



Increased interdisciplinary and inter-agency collaborations

Intertwine Alliance



USDA USFS





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[www.legacyhealth.org/gardens](http://www.legacyhealth.org/gardens)

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