Welcome!
The Presentation will start soon

Voip (Computer Audio) set-up
• When you first enter the room, run the Audio Setup wizard: Tools – Audio – Audio Setup Wizard
Edit your profile (optional)
• While you are waiting for the session to start, you can edit your Bb Collaborate profile (add a picture, contact info, etc.)

Question Etiquette
• We have many locations and limited time, but we want to answer your questions...
  – Pass question to front of room and have local moderator type it in chat box.
  – Raise hand and ask question when speaker calls upon you.
  – Post question to blog.

Remember to press RECORD!

HORTICULTURE: HISTORY & HEALTH

Winter 2012
Level 2 Master Gardener Training

Wisconsin HT Initiatives
2006, Candice Shoemaker
2006, Gene Rothert
2009, Jeanine Larsen
2010, Connecting the Garden to Personal Well-being
2012, Horticulture History and Health
Connecting the Garden to Well-Being

Adaptable Gardening Techniques

Houseplants

Horticultural Therapy & Master Gardener Volunteers

Introduction to horticultural therapy principles and practices, define roles and blend concepts with your volunteerism.

Provide information to better advocate on the importance of plants and green space.

Connecting the Garden to Personal Well-Being

Intro to Horticultural Therapy

• Theory & Research
• History
• Definitions
  – Types of HT
  – Healing gardens
  – Well-Being

Connecting the Garden to Personal Well-Being

History of Community Gardens
Three-Sisters Garden
Molding of Man

Garden Safety
Nature Play

The Link Between Agriculture & Medicine

An introduction to horticultural therapy principles and practices

CONNECTING THE GARDEN TO PERSONAL WELL‐BEING
Introduction to Horticultural Therapy

We are stardust. We are golden. And we've got to get ourselves back to the garden.

Woodstock – Joni Mitchell

Gardening is therapeutic...

Research shows a positive correlation between plants (natural environments) and an individual's well-being (mental, physical, emotional health)

Introduction to Horticultural Therapy

Physiological Responses

Ulrich

Psychological Responses

Kaplan

Surgery Recovery

Shorter post-operative stays
Less use of potent drugs and better attitudes

Roger Ulrich, Texas A&M Studies on nature and medical recovery

Stress reductions

In laboratory research, visual exposure to settings with trees has produced significant recovery from stress within five minutes, as indicated by changes in blood pressure and muscle tension.

Dr. Roger S. Ulrich, Texas A&M University
The Neese Memorial Rooftop Garden, Beloit Hospital

Lifestyle recovery

Attention fatigue restored
Improved relationships and career outlook


Blackhawk Technical College, Janesville

University of Wisconsin- Rock County, Janesville

Boerner Botanical Gardens, Hales Corners

Marathon County roadside views, Wisconsin
Elements of a healing garden

They paved paradise
And put up a parking lot
With a pink hotel, a boutique
And a swinging hot spot
Don’t it always seem to go
That you don’t know what you’ve got
Till it’s gone
They paved paradise
And put up a parking lot

Big Yellow Taxi-Joni Mitchell

Introduction to Horticultural Therapy

• Horticultural therapy (HT) is not only an emerging profession, it is a time-proven practice. The therapeutic benefits of peaceful garden environments have been understood since ancient times.

American Horticulture Therapy Association

Introduction to Horticultural Therapy

In the 19th century, Dr. Benjamin Rush, a signer of the Declaration of Independence and considered to be the “Father of American Psychiatry,” reported that garden settings had curative effects for people with mental illness.

American Horticulture Therapy Association

American Horticultural Therapy Association

HT is recognized as a practical and viable treatment with wide-ranging benefits for people in therapeutic, vocational, and wellness programs.

AHTA is an organization working to define HT and responsible for professional recognition of registered horticultural therapists.

www.ahta.org

Introduction to Horticultural Therapy

Well-Being

• Intellectual
• Physical
• Emotional
• Social
• Spiritual
Well-Being

<table>
<thead>
<tr>
<th>Cognitive</th>
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<td>Observations</td>
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<td>Sense of accomplishment</td>
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Can you think of things to do in a garden that fit into these categories?

Definitions

Horticultural Therapy
- HTR using process to reach defined goals and evaluate client

Therapeutic Horticulture
- Process of individual or group participating in process, no goals/evaluation

Vocational Horticulture
- Developing skills for employment

Social Horticulture
- Community building

Healing Gardens
- Integrating Horticultural Therapy Principles and Practice

CONNECTING THE GARDEN TO PERSONAL WELL-BEING

Connecting the Garden to Personal Well-Being

- Intellectual
- Emotional
- Spiritual
- Social
- Physical

- Plant-rich environments
- Sensory stimulation
- Accessibility
- Creating safe environments
- Experiences in the garden
Plant-rich environment

• Landscapes dominated by vegetation

Containers offer convenient access to plants
GreenWorks participants create plant-filled containers to place around county buildings, bringing green to much needed spaces.

If you can’t go out to access plants
Bringing plant materials indoors can be just as effective. Views upon green space are just as important, too. Students in University of Minnesota’s Intro to Horticultural Therapy practice creating indoor projects for defined audiences.

Plant-rich environment

• Plants predate humans by approximately 149 million years
• Humans have never been without plants
  – Plants historically have provided us with food and shelter
• Plants have been integral to healing practices and systems within most cultures over time

Plant-rich environment

• Plants are our earliest ancestors
  – Molecules remarkably similar: both have a ring of carbon and nitrogen atoms surrounding a single atom.
  • The atom is magnesium in chlorophyll; iron in hemoglobin
Plant-rich environment

Themed Gardens: Kitchen Garden
A whimsical kitchen garden display making use of old pots, pans and appliances. (Northwind Perennial Farm, Burlington, WI)

Themed Gardens: Colorful Patio Containers
Plants don’t have to be the only thing to bring bright colors to the garden! (Allen Centennial Garden, UW-Madison, WI)

Themed Gardens: Japanese Garden
Japanese garden design is rich with symbolism and evokes peace and balance between man and nature. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Smelly Garden
A whimsical garden design invites visitors to explore and interact with the plants. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Cottage Garden
The informal design of a cottage garden has a certain appeal and fascination. (Rotary Botanical Gardens, Janesville, WI)
Themed Gardens: Formal Italian Garden
Formal gardens provide a sense of structure and balance in the garden. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Reception Garden
This garden area is traditionally planted in blues and silvers each year. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Front Entrance Garden
When using annuals, it is easy to change the dynamics of a garden area. Here, maroons dominates the hill. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Front Entrance Garden
The same garden area on the previous slide, but now in yellows and blues. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Alpine Garden
An alpine garden is essentially a rock garden featuring diminutive plants capable of living in resource-poor environments. (Rotary Botanical Gardens, Janesville, WI)

Themed Gardens: Community Gardens
Volunteers grow vegetables to provide to the public through the adjacent food pantry. (Milton food pantry, Milton, WI)
Themed Gardens: Kid’s Garden
Children have their own place in the garden. (Troy Community Gardens, Madison, WI)

Connecting the Garden to Personal Well-Being
SENSORY STIMULATION

Sensory Stimulation

• SIX senses

Sensory Stimulation

• Multi-sensory stimulation in the garden has become emphasized as a therapeutic strategy using light, color, movement, sound and fragrance.
• All gardens are sensory!

Sensory Stimulation

• Sensory Markers
  – Change in path material to delineate new garden spaces.
  – Auditory markers such as water features or wind chimes may help
  – Textural or fragrance markers
  – Shadow Concerns

Sensory Stimulation: Sight

• Consider mobility in the garden first.
• Color, visual texture, form, movement, light and shadow stimulate the sense of sight.
• Use bright, vivid colors and group plants.
Sensory Stimulation: Sight
Consider Participant Age
• Aging eyes can see more highly saturated colors like red, orange and yellow more easily than blue, purple and green.

Sensory Stimulation: Sound
• Can be plant materials.
• Can be water features, wind chimes or other non-living elements.
• Can help define a space in the garden as an “auditory cue”

Sensory Stimulation: Touch
• Textures might include rough, smooth, ridged, furry, bumpy, soft and slimy.
• Interactive water features can also be of importance.

Sensory Stimulation: Smell
• Scent is subjective.
• Scent “intensity” differs as the day progresses and air humidity and temperatures change.
• Scent is typically “over-dramatized” in plant descriptions.

Sensory Stimulation: Smell
• Some plants have fragrant flowers (remember all timing issues!)
• Aromatic foliage
• Don’t combine scents, create “rooms” or spaces with varying scents
Sensory Stimulation: Taste

- Avoid pesticides and other chemical usage.
- Consider organic gardening methods.
- Use brightly colored vegetables.
- Consider raised beds.
- Know your plants!

Theories

- Overload & Arousal
- Learning
- Evolution

Accessible

- ‘Way finding’
- “Adapt the Gardener / Adapt the Garden”
- ADA compliant
  - Wheel chair accessibility
  - Raised beds
  - Path design
  - More...
- Universal design

Adapt the Garden: Garden Design

- The formal design of the English sunken garden allows for easy navigation, access to plants, and functional use of the lawn. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Garden Design

- The garden design takes into account the needs of the patients. (Legacy Health Care System, Portland, OR)
Adapt the Garden: Way Finding

[Left] Child finding his own way through the garden.
[Right] Older couple taking an easier route.

(University of Minnesota Landscape Arboretum)

Adapt the Garden: Way Finding

Maps are an easy way to direct visitors through the garden and to important destinations (e.g., restrooms). (University of Minnesota Landscape Arboretum)

Adapt the Garden: Way Finding

A labyrinth is a simple path to a center and is a symbolic reference to personal way-finding. (Troy Community Gardens, Madison, WI)

Adapt the Garden: Paths

Ambulatory needs of visitors should be considered when choosing paving materials and path design. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Paths

This allée easily guides the visitor’s route and eye. (University of Minnesota Landscape Arboretum)
Adapt the Garden: Paths
Curved paths may make the visitor curious as to what is around the corner. (Crystal Springs Rhododendron Garden, Portland, OR)

Adapt the Garden: Paths
Natural, uneven stones make the visitor slow down to enjoy their visit through the garden. (University of Minnesota Landscape Arboretum)

Adapt the Garden: Paths
Consider the materials and the slope of the path. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Paths
The zigzag bridge is a traditional element in Japanese garden design. Narrow paths and sharp turns may be difficult for people in wheelchairs to navigate. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Paths
Natural materials and uneven surfaces have an aesthetic appeal but may not be appropriate for all users. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Paths
Stone and mulch materials may work for some audiences but maybe not for those with ambulatory limitations. (Racine County Food Bank Teaching Garden, Racine, WI)
Adapt the Garden: Paths

The change of materials can mark the transition from one area of the garden to another. (Allen Centennial Garden, UW-Madison, WI)

Adapt the Garden: Paths

For visitors with low vision contrasting paving materials can be used to guide them through the garden area. (Buehler Enabling Garden, Chicago Botanic Garden, Glencoe, IL)

Adapt the Garden: Paths

Consider the width of paths and paving materials to accommodate wheelchairs. Curbing can help keep visitors on the path. (Regenstein Fruit & Vegetable Garden, Chicago Botanic Garden, Glencoe, IL)

Adapt the Garden: Paths

Curbs can help keep visitors on the path. (University of Minnesota Landscape Arboretum)

Adapt the Garden: Paths

Benches or other places to rest should be frequent throughout the garden. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Raised Beds

Raised beds designed for standing, sitting and wheelchair access. Wide angles also allow for better reach by those in wheelchairs. (Buehler Enabling Garden, Chicago Botanic Garden, Glencoe, IL)
Adapt the Garden: Raised Beds

Raised beds and containers at a range of heights can accommodate the various stances of a garden. (University of Minnesota Landscape Arboretum)

Adapt the Garden: Raised Beds

Raised beds can be made from a variety of materials. (University of Minnesota Landscape Arboretum)

Adapt the Garden: Raised Beds

A retaining wall serves multiple duties as a raised bed and a place for a volunteer to sit when working in the garden. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Raised Beds

Toe-kicks can allow feet to get under the planting bed to provide better balance and posture. (University of Minnesota Landscape Arboretum)

Adapt the Garden: Raised Beds

The garden at the top of this wall could possibly be accessed by people of all sizes! But watch the slope… (University of Minnesota Landscape Arboretum)

Adapt the Garden: Raised Beds

Examples of tray gardens to accommodate gardens standing or sitting. Note the room for legs to go under the trays. (Buehler Enabling Garden, Chicago Botanic Garden, Glencoe, IL)
Adapt the Garden: Raised Beds
Volunteer Victoria takes care of a special raised planting bed. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Raised Beds
Raised containers can be attached to pulley systems for easy access. (Buehler Enabling Garden, Chicago Botanic Garden, Glencoe, IL)

Adapt the Garden: Raised Beds
Gene Rothert, retired director, explains how a wall garden works. (Buehler Enabling Garden, Chicago Botanic Garden, Glencoe, IL)

Adapt the Garden: Raised Beds
Janice finishes planting lettuce in their wall garden display. (Rotary Botanical Gardens, Janesville, WI)

Adapt the Garden: Raised Beds
Combination of raised beds and vertical trellising. (West Madison Agriculture Research Station, Verona, WI)

Adapt the Garden: Gridded Garden
Grids can be useful to guide individuals with vision impairments. (Buehler Enabling Garden, Chicago Botanic Garden, Glencoe, IL)
CONNECTING THE GARDEN TO PERSONAL WELL-BEING

CREATING SAFE ENVIRONMENTS

- Physical safety
- Emotional safety

**Weekender Program**
Individuals sentenced with community service work at Rotary Botanical Gardens on weekends. What are the physical and emotional risks for the gardeners in this program?

**Chestnut House**
Residents of Chestnut House help each week with gardening tasks at Rotary Botanical Gardens. What are the physical and emotional risks for the everyone in this program?

**Rock Haven, Janesville**
Rock Haven is a residential home in Janesville. Staff and residents frequently use the garden for activities. What are the physical and emotional risks that must be addressed here?

EXPERIENCE IN THE GARDEN
Experience in the Garden

- Type of program
- Passive / Active / Quasi
- Structured / Unstructured

Experience in the Garden

- Who is your audience?
- What are their needs?
- What are the risks?
- When is the program?
- Where is the program?
- Who do you call ICE?

Horticultural Therapy Program @ CBG
Leslie Leith, HTR, assists senior participants in a HT program. (Chicago Botanic Garden, Glencoe, IL)

Glendale School Garden Program
Students plant, tend and harvest their own vegetables in their school garden. (Glendale Elementary School, Madison, WI)

Pumpkin Math Program
Elementary school program using pumpkins to practice math and estimation skills.
Janesville School of Blind and Visually Impaired
Students, teachers and therapists worked together to replant a shade garden in the school's courtyard. (Janesville, WI)

Chestnut House
Chestnut House residents volunteer at Rotary Botanical Gardens weekly. They perform a variety of tasks, from garden clean-up to preparing for a plant sale.

GreenWorks
Young adults participate in a job-skill development program, preparing them for careers in the green industry. (Racine, WI)

Offender Program
Non-violent offenders provide community service by gardening at Rotary Botanical Gardens.

Gardening with Jail Inmates
Inmates participating in the gardening program planted, maintained and harvested vegetables to be donated to area food pantries. (Rock County Jail, Janesville, WI)

Special Visitor’s Program
Program for non-profit health care allied organizations to access botanical gardens free of charge.
Rock Haven
Master Gardener Volunteers work with residents at a county operated residential home (Janesville, WI)

Connecting Personal Wellness to the Garden
Master Gardener Volunteers construct a seed mosaic as part of their study of therapeutic horticulture activities. (Rotary Botanical Gardens, Janesville, WI)

HT Experience

- MD
- RN
- OT
- PT
- RT

HT Experience (Examples)

- Stroke, Spinal Cord, and Physical Disabilities
  - Activities assisting in the development of fine motor skills, range of motion, hand-eye coordination, strength, balance, perception
  - Assist in achieving goals set by OT, PT
  - Activities that assist in psychological adjustment and well-being of patient
  - Opportunities for socialization in group
  - Vocational pursuits for after discharge

HT Experience (Examples)

- Traumatic Brain Injury (Physical)
  - Goal: To improve general physical conditioning and endurance
  - Basic objective: Survivor will tolerate standing for ten minutes at potting bench while assisting in transplanting activity
  - Advanced: Survivor will work in greenhouse for two-hour block daily without break, five consecutive days for two weeks

HT Experience (Examples)

- Traumatic Brain Injury (Cognitive)
  - Goal: To improve ability to correctly sequence multistep task
  - Basic objective: Survivor will correctly plant four-pack with seeds by following step-by-step verbal instructions
  - Advanced: Survivor will correctly complete daily closing routine of greenhouse by following written checklist
HT Experience (Examples)

• Traumatic Brain Injury (Emotional)
  – Goal: To develop relaxation techniques
  – Basic objective: Survivor will sit in greenhouse for fifteen minutes while listening to music of their choice
  – Advanced: Survivor will identify one to three horticulture activities that they find relaxing and will schedule to participate regularly

• Development Disabilities
  – Goal: Individual will display appropriate social skills in a group setting...
  – HT Goal: Individual will communicate daily in an appropriate manner during an hour long program (no hitting, swearing, name calling, shouting).

HT Experience (Examples)

• Mental Illness
  – Example: Individual with dependent personality disorder
  – Goal: to have patient assume responsibility
  – HT Goal: Patient will water and/or check plants on the unit once a day for once week.

Horticultural Therapy & Master Gardener Volunteers

Introduce principles and practices, define roles and blend concepts with your volunteerism

Provide information to better advocate on the importance of plants and green space.

Well-Being

Plant-rich environments
Sensory stimulation
Accessibility
Creating safe environments
Experiences in the garden

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THANK YOU!