

**Session Title:**

SUN A11: Evidence-based Landscape Design: Sensory Play Gardens' Value for Children with Developmental Disorders

**Marketing Statement:**

More than *just play*, children with developmental disorders benefit from strategically designed sensory playgrounds and gardens. This study evaluated the outcomes of outdoor play using a multiple baseline research design. This study provides a research methodology that is excellent for studying many questions within the broad field of landscape architecture.

**Learning Objectives:**

1. Overview evidence-based design research working with children who have developmental disorders in the context of a sensory garden/playground.
2. Define sensory processing disorders showing treatment in our sensory garden / playground at STAR Center in Denver, CO
3. Identify elements of landscape design based on research data that facilitate self-regulation and social participation for all children and contribute to a quality life experience.
4. Discuss research findings which go beyond playground design and have broad implications for architecture and landscape architecture in general.

**Session Outline**

1. Understanding Sensory Processing Disorder (SPD) and other Developmental Disabilities
  - a. Brief definition with videotaped examples of the subtypes of SPD and other prevalent developmental disorders such as Autism and ADHD.
  - b. Examples of treatment of SPD and other developmental disorders in the sensory garden and the sensory playground with an emphasis on specific elements of design that successfully support and enhance the treatment techniques and rehabilitation process.
2. Elements of Landscape Design that enhance the quality of experience for the child and family in the outdoor play yards and playgrounds: What the research data has shown about the value of sensory landscape features for all children as well as for treating children with developmental issues including:
  - a. The olfactory garden to affect mood and memory,
  - b. The touch garden to appreciate the primitive neurological power of deep pressure,
  - c. The visual garden to be swayed by particular colors,

- d. The “Time Inn” to recover self-control,
  - e. The “towering “Starbase 1” platform” to envision and dream,
  - f. The “Secret Grove” to communicate with another
  - g. The “Simple Paths” to explore patterns of exploration
  - h. The “Primitive Hut”, a quiet shelter
3. Elements of Playground elements that contribute to quality of experience for the child and family: What the research data has shown about the value of various playground elements
- a. The moving elements affect joy
  - b. The tactile elements affect body awareness
  - c. The proprioceptive activities affect self-regulation
  - d. The visual elements are cognitive affect knowledge
  - e. The auditory elements affect connecting with others
4. Overview of the Research Project
- a. The need for evidence-based research in landscape design
  - b. Review theoretical issues related to landscape design and playground design as discussed by Messervy and other landscape architects.
  - c. Understand the need for landscape architects and architects to design simply beyond what code and federal legislation (ADA) requires.
  - d. Discuss the development of the sensory garden and sensory playground at STAR Center (Denver, CO)
  - e. Provide the methodology for the study, a noncurrent multi-probe multiple baseline research design, highlighting strengths and limitations of this research method and applicability to questions that landscape architects have.
5. Advantages of Qualitative and Multiple Baseline Research designs in developing an evidence base for landscape design and playgrounds
- a. Brief description of qualitative and/or multiple baseline research designs that would be useful for landscape research
    - i. Non-concurrent designs
    - ii. Multiple probe designs
  - b. Discussion of the research findings from this project goes beyond playground design, and has implications for architecture and landscape architecture in general.
6. Discussion and Q and A

**Research:**

1. Miller, Lucy J. [\*Sensational Kids: Hope and Help for Children with Sensory Processing Disorder\*](#), Penguin Group, 2006 .Print.
2. Messervy, Julie Moir *The Inward Garden: Creating a Place of Beauty and Meaning*, Bunker Hill Publishing, 2007. Print
3. "Sensory Focus Magazine" *Playgrounds: A Natural Occupational Therapy Opportunity*. Spring 2013. Print.
4. Cooper Marcus, C. and Barnes, M. (ed.) *Healing Gardens: Therapeutic Benefits and Design Recommendations*. New York: Wiley and Sons, 1999.

**Presenter bios:**

**Lucy Jane Miller, Ph.D., OTR**

*Founder and Director, SPD Foundation and STAR Center*

Founder of the first Sensory Processing Disorder research program, and the world-renown STAR clinical center, Dr. Miller has been investigating and treating SPD since 1972. Studies by Dr. Miller, and colleagues, have helped bring SPD widespread recognition, and her work with families has improved countless lives. Dr. Miller has also developed nine nationally standardized tests to assess and diagnose SPD and other developmental disorders. In 2004, Dr. Miller received the Award of Merit from the American Occupational Therapy Association, the profession's highest honor. In 2005, she was awarded the Martin Luther King Jr. Humanitarian award by the state of Colorado. Her special interest in, research about, and new intervention method for those who have Sensory Processing Disorder has impacted countless children and families.

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**John McConkey, MBA, CPSI**

John McConkey serves as Market Research and Insights Manager at Landscape Structures. He brings over 15 years of experience in the healthcare field, and offers a unique perspective on inclusion, health, fitness and children's play on the playground. Since 2002, John has researched and tracked societal trends and industry trends to help create new and innovative playground design solutions. John develops and delivers IACET and LACES approved continuing education programs around North America and outside the United States.

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**Participant Questions:**

Why is play so important?

- A. Because it encompasses developmental principles
- B. Because it teaches you the rules of life like talking turns, loosing and winning, etc.
- C. Because it gives you an opportunity to play y)our work (and work your play)
- D. All of the above

What is the proprioceptive system?

- A. Muscles and joints
- B. Movement of head in space
- C. Combines A and B

What is SPD?

- A. Difficulty paying attention
- B. Difficulty making and keeping relationships
- C. Difficulty interpreting sensory information
- D. All of the above

What is the biggest difference between ASD and SPD?

- A. SPD does not have any relationship problems
- B. ASD does not have any sensory problems
- C. For ASD social interactions and social communication problems are primary whereas for SPD, sensory issues are primary

The main intervention for Dyspraxia is?

- A. Activities that lower arousal
- B. Activities that increase arousal
- C. Motor planning activities

The main intervention for SUR is?

- A. Activities that lower arousal
- B. Activities that increase arousal
- C. Motor planning activities

Which sensation travels derelict to the cortex without going through the lower structures?

- A. Visual
- B. Auditory
- C. Vestibular
- D. Olfactory

How many unique spaces does Minerva recommend in a garden?

- A. 2
- B. 4
- C. 6
- D. 8

Garden and playground research is?

- A. Complex
- B. Easy
- C. Interesting
- D. Not applicable

The most important task to accomplish in a Sensory Garden is?

- A. Change sensory functioning
- B. Change emotional issues
- C. Grow food
- D. Enjoy yourself and others