

# KEYNOTE ADDRESS, PRESENTED BY NC STATE UNIVERSITY COLLEGE OF DESIGN

## From Paradigm to Action in Environment-Behavior Research/Design

John Zeisel, Ph.D.  
Hearthstone Alzheimer Care  
I'm Still Here Foundation

Thursday, May 19, 5:00 pm-6:00 pm



### Participants will learn:

1. The role the environment plays in how our brains process experience.
2. How design evaluation has been adapted over time to take into account the neurosciences' role in design.
3. The contribution that physical environment makes to person centered dementia care.
4. How environmental design can truly make a difference and thus offer hope to persons with dementia / alzheimer's.
5. The centrality of environment and design to every human experience.

### Summary

How a simple conceptual leap (the radical concept of environment-behavior) moved over half a century from pure concept to a national action agenda; the example of designing for Alzheimer's and how partnering with the neurosciences has led to advances in both science and action.

At the first EDRA meeting (actually at a pre-EDRA edra meeting at MIT) we were all searching for a definition of what we all—architects, psychologists, sociologists, designers, government officials, professors, students—intuitively knew was a yet undefined field. Concepts, curricula, actions,

and just a few designs were presented. Over the years since then we have continued to search for relevance, and have often found it in application of e-b research to architecture, planning, landscape, and interiors. Today we are on the threshold of even greater relevance and application through partnering with other fields of science and action.

**John Zeisel, Ph.D.**, author of *Inquiry by Design*, is founder and president of *Hearthstone Alzheimer Care* and the *I'm Still Here Foundation*. He has conducted e-b studies for the National Institute on Aging, other government agencies, developers and architects. Over the past two decades he has built an organization that employs evidence-based design as a treatment for persons living with dementia. His 2011 book: *I'm Still Here: A New Philosophy of Alzheimer's Care* presents a radical public narrative reflecting e-b principles. Zeisel lectures internationally on nonpharmacologic treatment for Alzheimer's disease, focusing on the therapeutic effects of the designed environment, the effect of engagement with the arts and music, and the role neighborhood and community activities play in improving memory and quality of life. Zeisel's basic message is that we can make a difference in the lives of people with dementia—hope—as long as we remember that they are always here.

# PLENARY SESSIONS, PRESENTED BY NC STATE UNIVERSITY COLLEGE OF DESIGN

## The Science of Nature and Health: Discoveries and Design Recommendations from the Frontier

**Ming Kuo, Ph.D.**  
Associate Professor, Department of Natural Resources and Environmental Sciences  
Director, Landscape and Human Health Lab  
University of Illinois Urbana-Champaign



Thursday, May 19, 10:30 am-12:00 pm

### Participants will learn:

1. The myriad specific health outcomes that have now been tied to contact with nature.
2. The latest scientific findings on why and how nature might promote health.
3. The 9 “active ingredients” in nature that can promote health.
4. The implications of these findings for environmental design.

### Summary

In recent years, progress in the science of nature and human health has been nothing short of spectacular. The array of health outcomes tied to exposure to nature is, frankly, staggering. We now know far more about what “doses” or forms of nature are needed and the magnitude of their effects on health. And we even have a surprisingly rich and powerful conception of why and how contact with nature may promote health.

Perhaps just as exciting as these advances in basic science are their ramifications for design, policy, and practice. As we begin to grasp the specific mechanisms underlying the nature-health relationship, the implications for design become

increasingly powerful and sophisticated. The cumulative work in this area shows how great basic science can shape great environmental design.

**Ming Kuo, Ph.D.**, is a nationally and internationally recognized scientist examining the impacts of the urban forest on human health. Her research focuses on how “green space” supports healthy human functioning, in both individuals and communities. Starting in 1993, she led a series of studies on the impact of green spaces on human functioning in inner city Chicago, for which she and her collaborators received the Environmental Design Research Association’s Achievement Award. She and her student, Dr. Andrea Faber Taylor, examined the impact of green spaces on attention deficit disorder. Her work has convincingly linked healthy urban ecosystems to stronger, safer neighborhoods, lower crime, reduced AD/HD symptoms, reduced aggression, and an array of other mental health indicators. Her current work examines the effects of contact with nature on physical health, especially immune function.

Dr. Kuo’s work has had substantial impact on practitioners and policymakers, and the general public, as well as on scientific audiences. Her

work shaped urban forestry efforts in Wales, the Netherlands, the Caribbean, SITES — sustainable landscape design credit system, the U.S. Conference of Mayors' continuing Urban Forestry Resolutions, public housing in Chicago and on the East Coast, and was credited by the Chicago Tribune as playing a key role in the City of Chicago's largest tree planting in history. Her work has appeared

on CNN, NPR's Fresh Air, The Today Show, and Good Morning America, as well as the New York Times, Washington Post, and other magazines and newspapers. To date, the paid subscriptions to these outlets sums to over 100 million listeners, viewers, and readers. Of the top 30 most read Environment and Behavior articles, Dr. Kuo is an author on five.

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## Innovation, Collaboration and Cross-disciplinary Working: Shifting the Ground of Environmental Design Evidence

**Catharine Ward Thompson, Ph.D., FLI, FRSA**  
Director, OPENspace research centre  
Associate Dean of Research, Knowledge Exchange and Impact  
College of Humanities and Social Science, University of Edinburgh



Friday, May 20, 10:30 am-12:00 pm

### Participants will:

1. Understand the salutogenic and equigenic potential in environmental design.
2. Learn about the potential for environment and health research of innovative methods involving biomarkers.
3. Understand some of the key issues involved in interdisciplinary and longitudinal studies to consider the health and wellbeing benefits of environmental interventions.
4. Understand the likely health benefits of urban green spaces and the key underlying mechanisms.

### Summary

Policy-makers' renewed interest in environmental design reflect its potential to help address current health crises that are issues not just for the developed and westernized world but, increasingly, for countries across the globe: cardio-vascular disease, rising levels of obesity, Type 2 diabetes,

mental illness, etc. In addition, there are concerns about growing inequalities in health and wellbeing within, as well as between, countries. In this context, this presentation explores what kinds of approaches are needed if environmental design as health-enhancing (salutogenic) and reducing of health inequalities (equigenic) is to be taken seriously by public health policy-makers and planners. It considers the importance of working across and between disciplines, often in large-scale collaborative ventures, to research the implications of planning, design and management decisions for public open space and the outdoor environment. Innovative methods involving biomarkers of wellbeing or stress and neuroscience techniques will be considered. The particular challenges involved in longitudinal studies to research design interventions, and the opportunities that natural experiments offer, will also be explored. The presentation draws on research examples that consider all ages and life stages. It also shows examples of

ways in which such research can feed into policy, from World Health Organization initiatives to Scottish Government and national health service programs with local communities.

**Catharine Ward Thompson, Ph.D., FLI, FRSA**, is professor of landscape architecture, director of the multidisciplinary OPENspace research centre, and co-director of the new Landscape and Wellbeing MSc (the only programme of its kind in the UK) at the University of Edinburgh. Her research focuses on inclusive access to outdoor environments,

environment-behaviour interactions, and salutogenic environments. She was a member of the Scottish Government's Good Place, Better Health Evaluation Group and is working with WHO European Region to develop recommendations on urban green spaces and health. Current research includes a study of the effects of woodland interventions on mental wellbeing in deprived urban communities, and "Mobility, Mood and Place," exploring how urban environments can support easy and enjoyable activity into very old age.

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## Evidence-based Design: Driver of Social Investments in Early Childhood Environments

**Robin Moore<sup>1</sup>, Nilda Cosco, Ph.D.<sup>2</sup>, and Jennifer Zuckerman MacDougall<sup>3</sup>**

<sup>1</sup> Professor of Landscape Architecture and Director of The Natural Learning Initiative, NC State College of Design

<sup>2</sup> Research Associate Professor of Landscape Architecture and Director of Programs of The Natural Learning Initiative, NC State College of Design

<sup>3</sup> Healthy Living Senior Program Officer, Blue Cross and Blue Shield of North Carolina Foundation

Saturday, May 21, 11:15 am-12:45 pm

### **Participants will:**

1. Observe how physical environment-behavior concepts, including behavior setting, affordance, and territoriality can be applied to the universal design of an intergenerational community park.
2. Understand the step-by-step NLI community-based participatory process of assisting childcare centers with improving outdoor learning environment quality.
3. Realize that physical activity and healthy eating of children under five years old can be supported by evidence-based/informed landscape design.
4. Appreciate the challenges of long-term landscape management to ensure continuing environment-behavior viability of intergenerational children's environments.

### **Summary**

Prevalence of sedentary lifestyles has increased awareness about the importance of environments that children experience every day, especially those where they spend significant time away from home. Thus, childcare centers have become a focus of research regarding indoor and outdoor design. The development of evidence-based projects is crucial to guide adequate design decision-making, support new environmental policies, and to attract funding to carry out interventions. Meanwhile, socially minded organizations are looking to support the development of sustainable programs whose impact is measurable. Responsible social investments and evidence-based programs are indissolubly connected by shared values of researchers, practitioners, and funders.

**Robin Moore, DiplArch, MCP, Hon. ASLA**

is professor of landscape architecture and director of the natural Learning Initiative, College of Design, North Carolina State University. He is an honorary member of the ASLA and holds degrees in architecture (London University) and city and regional planning (MIT).



Moore is an international authority on the intergenerational design of urban play and learning environments, former chair of the Environmental Design Research Association, former president of the International Play Association, and a member of the UNESCO-sponsored “Growing Up in Cities” research team. Recent publications include the book: *Nature Play & Learning Places and Design for Healthy Childhoods and a Healthy Planet*, in *Biophilic Design*.

**Nilda Cosco, Ph.D.**

research associate professor and director of programs, Natural Learning Initiative, College of Design, North Carolina State University. Dr. Cosco holds a degree in educational psychology, Universidad del Salvador, Buenos Aires, Argentina and a Ph.D. in landscape architecture,



School of Landscape Architecture, Heriot-Watt University/Edinburgh College of Art, Scotland. In 2000, she co-founded, with Professor Robin Moore, the Natural Learning Initiative. She devel-

oped the NC statewide Preventing Obesity by Design (POD) project and co-directed it since 2007. The project aims at using childcare outdoors as a resource to support children’s daily physical activity, healthy eating and outdoor learning. Cosco’s research focuses on the impact of the physical environment on children’s play and learning, health, and well-being. Findings are used to support evidence-based best practice indicators, design assistance, training, and dissemination of information.

**Jennifer Zuckerman MacDougall**

is senior program officer for Healthy Living, Blue Cross Blue Shield Foundation of North Carolina. Her focus is to lead the Foundation’s efforts to increase access to safe active environments and provide sources for healthy, locally sourced food. These investments include a strong focus



on early childhood development and food systems. She received her Bachelor of Science degree in parks, recreation and tourism management, Summa Cum Laude in 1995 and completed her master’s degree in parks, recreation and tourism management in 1999. Zuckerman MacDougall has also worked in a variety of North Carolina nonprofits including the North Carolina High School Athletic Association, Special Olympics North Carolina, and North Carolina Amateur Sports. She currently serves as the vice-chair of the Center for Environmental Farming Systems Advisory Board and is a member of the Green Community Schools National Advisory Board and the National Institute of Medicine Early Childhood Obesity Prevention Task Force and the Statewide Prevention Task Force.