



23rd Heinz Awards Honor Ming Kuo for Her Body of Work Documenting the Impact of Green Space, Nature Experiences on Human Health

Dr. Kuo's rigorous studies demonstrate urban green space, nature experiences have measurable effects on mental and physical health, and cognitive development in children

PITTSBURGH, September 18, 2018—The Heinz Family Foundation today named Ming Kuo, Ph.D., the recipient of the prestigious 23rd Heinz Award in the Environment category. Dr. Kuo's research on the impact of green space on physical and mental health, crime and aggression in urban settings, and ADHD in children, is impacting urban planning and design policy both in the United States and internationally, and the application of her research is introducing new approaches to treating patients.

As part of the accolade, Dr. Kuo will receive an unrestricted cash award of \$250,000.

An internationally recognized environmental psychologist, Dr. Kuo's body of work has empirically solidified the health benefits of green spaces and nature experiences. Her rigorous, meticulously designed studies have demonstrated that the presence of green spaces and the opportunity to experience nature have significant, measurable impact on the psychological, physical and social aspects of human health, especially children's cognitive development. Her work examines the relationships between exposure to natural features and outcomes such as rates of crime and violence; well-being and coping; exercise and vitality; and attention, executive functions, self-control and learning.

One of Dr. Kuo's first major contributions examined the role of greenery on crime and aggression in urban settings. In the 1990s, Dr. Kuo and Dr. Bill Sullivan, co-founders of the Human-Environment Research Lab, studied a public housing area in which residents were randomly assigned to apartments, some with greener settings and some without. Tests on the effect of greenery showed that residents in buildings with proximity to greenery had lower rates of aggression and violence. A comparison of police reports for the buildings showed that more greenery also correlated with lower crime rates. The research suggests that planting even a few trees in otherwise barren urban areas could help to create safer neighborhoods.

In the 2000s, Dr. Kuo collaborated with Dr. Andrea Faber Taylor to study whether exposure to green space has an effect on the severity of ADHD symptoms. Results from a parent survey study found that ADHD symptoms were lessened after short-term activities in green outdoor settings. A follow-up study also found milder symptoms were reported for children who spent more time playing in green settings on a regular basis. Their experimental study, "Children with Attention Deficits Concentrate Better After a Walk in the Park," found that children demonstrated better concentration after only 20 minutes in a park setting than they did after other walks in neighborhood and downtown settings.

Dr. Kuo's recently co-authored study, "Do Lessons in Nature Boost Subsequent Classroom Engagement—Refueling Students in Flight," which was reported in *Frontiers in Psychology*, found similar results with children who had not been diagnosed with ADHD. Rather than causing the children to be overly excited and unable to refocus, time outdoors measurably extended the children's ability to concentrate and engage when they returned to the classroom.

"We worked with two teachers for an entire semester, and initially they told us they could not afford time outside because their instructional time was too precious," says Dr. Kuo. "They thought their students would be less engaged, and more disruptive, but in fact the kids were substantially more engaged and better behaved after a lesson outdoors."

A compelling communicator and speaker, Dr. Kuo's work is impacting policy in the United States and around the world. The application of her research was instrumental in a \$10 million tree planting initiative by the City of Chicago—the largest in the city's history—and has helped to shape federal landscaping guidelines and national research agendas by the United States Department of Agriculture, the Centers for Disease Control and Prevention, the National Institutes of Health and the Robert Wood Johnson Foundation. Her work also contributed to the development of the Sustainable SITES program guidelines, often described as a LEED-like rating system for landscapes. Agencies and organizations in Wales, Canada, the Netherlands and the Caribbean are drawing on her research to argue for the preservation and expansion of urban greenspace.

"Through our work, we are demonstrating that green space has an impact on human behavior, and among urban planners there is now a growing realization that nature plays an important role in the functioning of a city," says Dr. Kuo. "I don't do research to have it sit on a shelf, so seeing changes such as the commitment to tree planting in Chicago is very exciting to me and my colleagues. Our lab findings have also informed the development of the SITES crediting system, which lays out concrete, evidence-based benchmarks for designing and managing urban landscapes that will contribute to human health and well-being."

Dr. Kuo's studies have also provided the evidence to guide physicians and programs to prescribe time in parks and walks through nature to their patients.

"Ming's rigorous studies demonstrate the inherent need for human beings to connect with the natural world, and the powerful consequences when that connection is broken," said Teresa Heinz, Chairman of the Heinz Family Foundation. "Her research shows natural spaces are not luxuries or add-ons to urban design, but essential to community well-being, and to our children's mental and physical health and development. Ming is a passionate communicator who is using her voice to change policy and practice."

Dr. Kuo and collaborators are currently in the middle of a three-year project (2016-2019), partially funded by the U.S. Forest Service's Urban and Community Forestry (UCF) program, to examine how green space is related to health expenditures among more than four million members of the Kaiser Permanente Northern California health system. Using Kaiser's comprehensive database of health utilization and cost data, the project is estimating the health care return on investment relative to cities' expenditures on forestry. Findings will be translated into a model available for public use through a free, open-source modeling tool using the Natural Capital Project's Integrated Valuation of Environmental Services and Tradeoffs (InVEST) platform.

Established to honor the memory of U.S. Senator John Heinz, the Heinz Awards this year recognize those who have made significant contributions in five distinct areas of great importance to Senator Heinz: Arts and Humanities; Environment; Human Condition; Public Policy; and Technology, the Economy and Employment. Now in its 23rd year, the Heinz Awards has recognized 139 individuals and awarded more than \$27.5 million to the honorees. For more information about the awardees visit www.heinzawards.net/2018.

In addition to Dr. Kuo, the 23rd Heinz Awards honored the following individuals, who will receive their awards in Pittsburgh on October 24, 2018:

- **Arts and Humanities: Ralph Lemon**, an innovative choreographer and multidisciplinary artist whose richly moving body of work addresses concepts of race, justice and identity in performances that interweave movement, media, visual arts and language;
- **Human Condition: Norman Atkins**, an educator whose bold new model for preparing, equipping and training teachers and school leaders is effecting dramatic, positive change in public school classrooms across the country;
- **Public Policy: Sherri Mason, Ph.D.**, a global expert on freshwater microplastic pollution whose research is raising awareness of the sources and volume of microplastics and microfibers in U.S. freshwater systems, leading to state, federal and international policy change;
- **Public Policy: Enric Sala, Ph.D.**, a marine ecologist working at the intersection of science and policy to protect the world's last pristine marine environments; and
- **Technology, the Economy and Employment: Linda Rottenberg**, a social entrepreneur whose global nonprofit is opening doors of economic opportunity for entrepreneurs in both emerging countries and the United States.

EDITORS/REPORTERS: To obtain photos of Dr. Kuo or any of the other recipients, please contact Abby Manishor at amanishor@burness.com or 917-539-3308.

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About the Heinz Awards

Established by Teresa Heinz in 1993 to honor the memory of her late husband, U.S. Senator John Heinz, the Heinz Awards celebrates the accomplishments and spirit of the Senator by recognizing the extraordinary achievements of individuals in the areas of greatest importance to him. The awards, administered by the Heinz Family Foundation, recognize individuals for their contributions in the areas of Arts and Humanities; Environment; Human Condition; Public Policy; and Technology, the Economy and Employment. Nominations are submitted by invited experts, who serve anonymously, and are reviewed by jurors appointed by the Heinz Family Foundation. The jurors make recommendations to the Board of Directors, which subsequently selects the Award recipients. For more information on the Heinz Awards, visit www.heinzawards.net.

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