

**Title:**

Effects of a Simulated Nature View on Cognitive and Psycho-physiological Responses of Correctional Officers in a Jail Intake Area

**Link to ANFA's mission**

This research project grew out of an exploration of the potential for applications of neuroscience concepts and methods to help develop a better understanding of the ways correctional environments affect inmates and staff. In October 2006, a workshop was held which brought together architects, corrections administrators, and neuroscientists to discuss the topic. The impact of views of nature was one topic identified as offering potential for further study. The Sonoma County Sheriff's Department offered their booking area as the locus of the study.

**Abstract**

The project for the Academy of Architecture for Justice of the AIA was a pilot study funded primarily through a National Institute of Corrections cooperative agreement. The study focused on the impact of visual features (color/nature) on stress in an intake/booking center at the Sonoma County Jail. This was done by measuring heart rate variability in booking area staff pre- and post- providing the staff with views of nature. Polar monitor procedures were used to collect data from all three shifts on a typical Friday and Saturday. At the end of their shift, after the monitors were removed, a Perceived Stress Scale questionnaire was administered, as well as a "backward digit span" test, and a staff shift survey. At the completion of the initial data collection process, a mural carefully selected to portray affective views of nature was installed for 6 weeks. Following this period, another set of measurements was made of the same officers.

Results of the data analysis demonstrated that officers' heart rate was significantly lower at the beginning of the shift in the post period; the rate of increase of heart rate was significantly less from the beginning to end of shift in the post period; and there was a significant increase in log power in the post period, indicating inhibition of heart rate variability. The rate of log power increase is significant and is consistent with lower heart rate and less stress. These data are suggestive of a pattern that is consistent with reduced stress at the end of the day after exposure to the mural intervention.

## Authors:

Jay Farbstein, PhD, FAIA  
Principal, Jay Farbstein and Associates, Inc.



President of Jay Farbstein & Associates, Inc., Mr. Farbstein has more than 30 years of professional experience and is nationally recognized for his contributions in the field of facility planning, programming, and post occupancy evaluation research.

Mr. Farbstein has been responsible for major design programs and development of design guidelines for a wide variety of governmental, judicial, correctional, educational, and social service agencies. Examples include guidelines for PG&E's service centers, office space standards for CN Rail, a new corporate headquarters for TransCanada Pipelines, the headquarters facilities for large state agencies, Long Beach and Oakland Federal Buildings, border stations, the U.S. Geological Survey's Western Regional Center, juvenile and many others. For the past 10 years, Mr. Farbstein's practice has focused on planning courthouses, with projects mostly in California as well as Seattle and New York.

Mr. Farbstein has led or participated in numerous facility evaluation projects. He has been active in the application of the Serviceability Tools & Methods (ST&M), which provide tools for setting building requirements and rating current or proposed facilities. Other facility evaluation projects include a 15-year assessment study of U.S. Postal Service facilities, the ORBIT-2 study of offices and information technology, a new office building of the World Bank, development of methods for evaluating correctional facilities for the National Institute of Corrections (and numerous evaluations of jails, prisons and juvenile facilities) and many other projects. Recently, he led a study of the application of neuroscience concepts and methods to the evaluation of correctional environments.

Mr. Farbstein has published widely on facility programming and evaluation, including *People in Places* (Prentice Hall), and articles in the AIA's *Architects Handbook on Facility Programming*, as well as in Wolf Preiser's books *Facility Programming; Programming the Built Environment, The Professional Practice of Programming, and Building Evaluation*, as well as in many other journal's and edited volumes. He has been quoted in the New York Times, Time magazine, and many design journals, and has delivered papers to many professional and academic groups, including the AIA, Human Factors Society, Environmental Design Research Association, ASTM, and at symposia in the U.S., Canada, England, France, and Japan.

Mr. Farbstein has been instrumental in developing and leading the Rudy Bruner Award for Urban Excellence. In this capacity, he has co-authored nine books for the Bruner Foundation including *Connections: Creating Urban Excellence; Rebuilding Communities; Building Coalitions for Urban Excellence; Visions of Urban Excellence; Sustaining Urban Excellence; and Commitment to Place*.

Mr. Farbstein has received many awards for his work from such sources as *Progressive Architecture* magazine, the national AIA, the U.S. Postal Service, the National Endowment for the Arts and the Environmental Design Research Association's lifetime career achievement award (he formerly served as the organization's chair).

Mr. Farbstein is a registered architect in California, holds a Bachelors Degree in Fine Arts from UCLA, a Masters Degree in Architecture from Harvard University, and a PhD in Environmental Studies from the University of London. He is a Fellow of the American Institute of Architects where he served on their national research committee; currently, he is co-chair of the Academy of Architecture for Justice's research program.

Melissa Farling, AIA, LEEDap  
Research/Justice Director, Jones Studio Inc.



Melissa Farling joined ANFA as a Research Associate at the end of 2005. She received her Bachelor of Arts degree in Architecture from the University of North Carolina, Charlotte and both her Bachelor of Architecture and Masters Degree in Architecture from the University of Arizona. Her more than twenty years of experience has focused on the design and project management of criminal justice facilities and large-scale public projects. In 2007 she joined the firm of Jones Studio, Inc. in Phoenix, AZ. Prior to that Melissa served as Vice President with Gould Evans in the Phoenix office.

Her passion for studying the effects of architecture on behavior began with her Master's thesis, which explored these affects in a highly restricted environment: a state prison. Ms. Farling serves as a local AIA Chapter Past President on the Central Arizona Chapter Foundation Board and sits on the Board of Gnosis Ltd, a non-profit organization which seeks to preserve and present the significant creative contributions of individuals who have changed our world. Melissa is currently co-chair of the Academy of Architecture for Justice's (AAJ) Research program as well as a core member of the AAJ's Sustainability group. In her preparation for research linking neuroscience and correctional facility design, Melissa audited graduate behavioral neuroscience classes at Arizona State University. In 2005-2007, she also observed research in the laboratory of Dr. Jiping He, Professor, School of Biological & Health Systems Engineering at Arizona State University. Dr. He pursues research aimed at helping people with Central Nervous System impairments using advanced neural implant devices for brain-machine interfaces.

Melissa has co-chaired 2 workshops: "Neuroscience and Correctional Facility Design Workshop" (New Orleans, LA, 2006) and "Neuroscience and Courthouse Design Workshop" (Brooklyn, NY, 2007) with Jay Farbstein. The former workshop led to the project described above that Melissa recently finished with Jay Farbstein, PhD, FAIA, Richard Wener, PhD, Jon Sollers III, PhD and Julian Thayer, PhD (with help from Upali Nanda, PhD).

Ms. Farling has been applying ANFA workshop experience and research regarding views of nature and stress on four projects: contributing author of an Arizona K-12 primer; contributing author of an AIA Academy of Architecture for Justice "Green Guide to Justice"; as part of the Jones Studio design team working on the Mariposa Land Port of Entry in Nogales, Arizona; and developing an office design that promotes creativity.